SUMMER BOOKS[1] -- STEMMING READING LOSS IN HIGH-POVERTY SECOND GRADERS THROUGH ACCESS TO APPROPRIATE BOOKS DURING THE SUMMER VACATION BREAK

By

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Abstract of Dissertation Presented to the Graduate School
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SUMMER BOOKS! -- STEMMING SUMMER READING LOSS IN HIGH-POVERTY SECOND GRADERS THROUGH ACCESS TO APPROPRIATE BOOKS DURING THE SUMMER VACATION BREAK

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Is summer reading loss in high poverty, primary-age children reduced or reversed when students have the opportunity to regularly read books of interest to them during the summer vacation break? Second grade students (N= 46) from low-income families were randomly assigned to a treatment and control group during the summer break. Students in the treatment group received weekly home visits by a local bookmobile for 10 weeks during the summer vacation. At each visit, children were allowed to select up to five books from a wide variety of topics and genres. Students in the control group received no visits from the bookmobile. In the spring before school was out, in the fall upon returning to school, and in the winter of their third-grade year, students were assessed on measures of fluency (rate, accuracy, and automaticity), comprehension, and reading motivation. There were no statistically significant differences between the two groups on any reading measure at first and second posttest except children's self-concept as readers. A comparison of gain scores on reading comprehension of

only those students who had participated in at least 70 % of the bookmobile visits versus those of the control group did indicate differences approaching statistical significance at first posttest It was concluded that while access to appropriate books is likely to stem summer reading loss for high poverty primary aged students, access alone is not sufficient to substantially improve outcomes in reading over the summer for students handicapped by both low achievement histories and poverty Implications of the study for policy, research and practice are also discussed

CHAPTER 1
INTRODUCTION TO THE PROBLEM

Introduction

> As the 20th century ends the U S economy is more and more taking on the shape of an hourglass with families at the high end of the income distribution doing better and better and those at the low end doing worse and worse (Entwisle, Alexander & Olson, 1997, p 31)

Socioeconomic status and school achievement The economic polarization that Entwisle and her colleagues (1997) document in their book *Children Schools and Inequality* demonstrates that the poverty of children has deepened and intensified in our country in the last few decades It is reflected in the increasing gap between more and less affluent American families in receiving appropriate levels of health and medical care, in the security from violence they experience in their neighborhoods, and in the quality of their housing. This gap also exists in the quantity and quality of literacy opportunities they experience in their homes and neighborhoods, and the levels of academic achievement they exhibit in their school lives Ultimately this gap represents the different legacies they will pass down to their own children

Citing statistics from the 1995 United States Bureau of Census, Nieto (2000) concludes that the percentage of families living in poverty has grown over the last two and a half decades, with poverty the greatest among the young In the United States, the poverty rate is twice that of the United Kingdom or Canada, with the relative gap between poor and affluent children greater than that seen in any other developed country

There is also a dramatic change between how poor children were raised in earlier decades and in this decade In 1969, 65% of poor children under 6 years lived in two-parent homes, now two-thirds of poor children live with their mothers, whose earning power remains two-thirds that of men (Sorenson, 1991) This poverty is not race neutral while there are still more nonwhite children living in poverty in the United States larger percentages of African Americans, Latinos and other people of color make up the ranks of the poor

Although America is generally considered to be a literate culture, there are tremendous variations in children s degree of access to appropriate school-valued literacy activities, and access to appropriate reading materials in their homes, neighborhoods and daycare facilities Ethnographic studies of actual language and literacy practices of minority and low socioeconomic families (Heath, 1983 Purcell-Gates, 1995 Taylor & Dorsey-Gaines, 1998) provide thick descriptions of remarkably full and literate traditions but these traditions are qualitatively different from the storybook traditions of the American mainstream and they typically differ as a function of income level As Heath (1983) pointed out, children s ways with words are adaptive, and there is often an incongruence between them and the standard literacy curriculums and instructional practices at school resulting in a disconnect between home and school literacy that often has devastating results for the academic progress of some children

At the same time, recent studies documented the great disparities among middle and low-income communities in resources available in homes and child care sites (Neuman, 1999, Neuman & Celano 2001, McGill-Franzen, 2002) And although many poor children come from home environments that value education, as a rule, low-income families have neither the physical nor psychological resources to support education well

Better-off families are more likely to take their children to museums and libraries, travel to distant places, and spend more hours per day reading (Entwisle et al 1997) Middle-class parents have the resources to buy their children computers, age-appropriate books, and reading manipulatives, engage them more often in conversations using expansive vocabularies and model reading as a form of enjoyment in their own lives (Baker Gersten, & Keating, 2000)

Summarizing Bernstein, Wood (1998) says that children from middle-class homes are exposed more often to an elaborated code, decontextualized language that is more similar to written text, while working-class and lower-class children are exposed more often to a restricted code, language that is more contextualized and immediate to the child s surroundings As children progress through school the use of language is more characteristic of written language than of spontaneous conversational language Children who have had little exposure to this use of language in their homes become progressively less able to meet the demands of an academic curriculum. Children with more exposure are more likely to develop schema that will aid them in their interpretation of new text.

Thus, children from the lower socioeconomic strata of society begin school with fewer school-valued literacy and language experiences than their more advantaged peers, creating an unlevel playing field from the moment a child walks through his or her kindergarten classroom door This unlevel field is reflected in the measured achievement gap between the two groups of students even before the *ABC* song is chanted for the first time, leading some to estimate that as many as 25 to 40% of children in the United States are destined for school failure before they begin formal schooling (Hodgkinson, 1991, Neuman, 2001) Student variations in nonschool background characteristics (e g.

socioeconomic status, age, ethnicity, head of household) account for most of the observed differences in student achievement upon entry into school

Although American children tend to do well in international comparisons of reading at the elementary level (Berliner & Biddle, 1995; Neuman, 2001; Rothstein, 1998), readers among poor urban neighborhoods and rural townships continue to be at risk for failure, with patterns of underachievement particularly stark for children of diverse cultural, linguistic, and racial backgrounds (Allington, 2001; Allington & McGill Franzen, 2000; Neuman & Celano, 2001)

When children start school, their pre-reading and pre-math skills reflect their uneven family and community situations. The initial learning gap that exists between high- and low-poverty students entering school is large and continues to increase as children progress through school (Coleman, Campbell, Hobson, McPortland, Mood, Weinfeld, & York, 1966; Puma, Karweit, Riccuiti, Thompson, & Vaden-Kiernan, 1997). This initial and increasing gap between the achievement of low- and high-income children has historically been explained using Campbell's (1970) notion of fanspread. Like an open fan, (Figure 1-1) the trajectory of each spoke (students' achievement) is different, leading

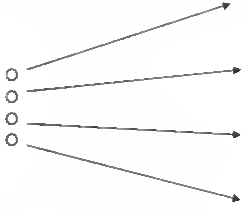

Figure 1-1. Campbell's notion of fanspread

to progressively widening spaces between students' levels of achievement In fanspread hypothesis, differences between disadvantaged and more advantaged students increase over the years of schooling – the implication being thet disadvantaged students learn less quickly than do students who have more support at home, more qualified teachers, and more school funding per pupil In addition, the discursive practices of middle-class children get reinforced in school, whereas those of lower-class and working-class families get discontinuid Disadvantagad students thus fall farther behind the norm without special help (i e , compensatory education, special education)

Although some evidence exists that the reading achievement gap between more and less economically advantaged children has narrowed over the last decades (Grissmer Kirby Berends, & Williamson, 1994), analyses of data from the most recent National Assessment of Educational Progress (Donahue, Voelkl Campbell, & Mazzeo 1999) show that it is far from eliminated For example, when comparing the achievement of students receiving federal meal subsidies, receivers were twice as likely as nonreceivers to fall below the *Basic* level (58% versus 27%) At the other end of the spectrum, only 13% of meal subsidy receivers scored at a *Proficient* level versus 40 % of nonreceivers. In 1991 Hodgkinson predicted that one third of all preschool children in the United States were destined for school failure because of poverty neglect, sickness, handicapping conditions, and lack of adult nurturance[1] Even given the substantial gains in recent years minority youth acquire fewer years of school, are more likely to be retained or placed into special education attend 2-year instead of 4-year colleges, and

[1]If "school failure translates into exiting school prematurely (i e , dropping out), then states like Florida, with a current graduation rate hovering at about 50%, have far exceeded Hodgkinson's predictions

demonstrate significantly lower achievement scores in reading, math and science on standardized measures than their white, mainstream peers (Denton, 2000 Ortiz, 1986) As high percentages of minority students in America, especially African-American and Hispanics, are poor these statistics are not surprising

The reading achievement gap that exists between middle class American children and American economically disadvantaged children appears to be a persistent and pervasive retained or placed into special education, attend 2-year instead of 4-year colleges, and demonstrate significantly lower achievement scores in reading, math and science on standardized measures than their white, mainstream peers (Denton, 2000 Ortiz, 1986) phenomenon If the cause of this problem is largely located in the home and community as some theorize (e g Bernstein, 1978) then it may also be intractable A vast body of evidence documents socioeconomic status differences in literacy development (Adler & Fisher, 2001, Entwisle et al 1996, Hart & Risley, 1999 Heath, 1983 Neuman & Celano 2001) Children in middle class families with well-educated parents generally thrive while others start school behind their more advantaged classmates and stay behind Compelling evidence exists that children who do not learn to read fluently in the early grades have few opportunities to catch up with their peers, and primary-grade difficulties tend to predict continuing reading difficulties throughout schooling (Adler & Fisher, 2001, Barrington & Hendricks, 1989 Lloyd, 1978, Pressley, 1998, Snow Burns, & Griffin, 1998, Stanovich 1986) Students who are not successful in appropriating the oral and written language forms or conventions demanded by the mainstream may face a lifelong liability (Delpit 1995 Fairclough, 1995, Hasan, 1997).

Seasonal variations in performance. Historically school achievement has been studied in single snapshots as in cross-sectional studies (e g., Coleman et al , 1966) or in

longitudinal studies tied to an annual or biennial testing schedule (Jnel 1988). Yet increasingly researchers recognize that both approaches miss the substantial seasonal variation in children's learning rates (Entwisle et al, 1997, Ginsberg, Baker, Sweet, & Rosenthal, 1981, Heyns, 1978). Scores from tests given once a year give the distinct impression that children from high socioeconomic families gain at a more rapid rate than low socioeconomic children that is, the latter derive less from school than the former (thus supporting the fan-spread hypothesis). However when score gains are computed by season (separately for winter and summer) data suggest that during the school year all groups of children (regardless of their background characteristics) progress at approximately the same rate but that there is a strong inverse relationship between the socioeconomic status of students and their summer achievement rates. Only during the summer do rates vary significantly. In short, the pace of academic growth in poor children reflects the school calendar.

Entwisle and colleagues (1997) describe this fluctuation in achievement rates as the Faucet Theory. The *faucet* is *on* during the school year for all children as they receive what they need to be able to progress satisfactorily, regardless of their background circumstances. However, during the summer months, the *faucet* is turned *off* for children from low-income families who do not have the resources to keep them moving forward. By contrast, the faucet remains on during the summer for children from higher income families, as they continue to grow because their families and neighborhoods can supply them with resources needed to support their growth when school is not in session. Poverty, then, limits academic growth mainly by denying young children the resources they need to grow outside of school -- before school formally begins and during the summer vacation. The cumulative pattern of summer losses, combined with the initial

gap observed upon entry into school has been hypothesized to underlie the growing gap between successful and unsuccessful students (Paris, Pearson, Cervetti, Carpenter DeGroot, & Mercer, in press) Much that children learn or lose during the summer is strongly associated with family socioeconomic status Carter (1984) points out that as students progress through school, their level of performance becomes progressively more related to previous levels of performance, resulting in the Matthew Effect (Stanovich, 1986) that is, the phenomenon of *the rich getting richer and the poor getting poorer* cognitively speaking.

Changing views of literacy Until recently little concern has been given to the disparity in achievement that exists between more and less affluent students Daniel and Lauren Resnick (1977), in their review of historical models of literacy before the 20th century conclude that schools in the past did not have as their goal the attainment of high levels of literacy for the entire population Literacy models before the 20th century were established to attain high levels of literacy for only a small number of elites Over time there have been sharp shifts in expectation concerning literacy One of those shifts is the expectation that all children, regardless of background circumstances, should learn to read well These increasing demands of literacy have created a new challenge for educators (Allington 2001 Unsworth, 2001) The bar has been raised with new literacy standards and these standards unlike in the past, are expected to be attained by all students

The problem is that policy makers and educators alike are inclined to look for the solution to this raised bar in the curricular and instructional programs of schools At the same time, they often construe obstacles to its achievement as the fault of teachers and individual children themselves This view reflects a subtle but significant shift in thinking

about school failure from the past McGill-Franzen (2001) points out that where failure to learn to read was once largely understood as an outcome of socioeconomic disadvantage, it has now been reconceptualized as an individual disability This reconceptualization is no better illustrated than in the skyrocketing numbers of children now being identified as learning disabled (80% of whom are typically considered reading disabled) Although a reading disability classification, by federal law (Public Law 91-230) is supposed to exclude children whose problems are due to ' environmental disadvantage" (Mercer 1997), a disproportionate number of poor children are classified as "disabled" with the implicit assumption that reading problems, when all is said and done, reside in the individual and are caused primarily by constitutional factors such as organic disorder or genetic limitation (Coles, 1998 Vellutino Scanlon, Sipay Small Chen, & Denckla, 1996) and, of course, mediocre instruction Brofenbrenner (1976), however, caution us to view human development as occurring in a context of overlapping and interdependent systems of social and cultural organization Likewise, Bloome (1994) instructs us to take an anthropological perspective that asserts the inseparability of an individual from his or her cultural context Understanding literacy development, then calls for an examination of the relevant contexts and their interrelations (e g home, school community) including the beliefs and values of the adults responsible for structuring those environments in which a child is situated from birth Thus literacy needs to be reconceptualized within broader social orders (Gee, Hull, & Lankshear, 1996 Street, 1999)

It is possible that the large and widening gap in achievement in more and less advantaged children has a lot *less* to do with the constitutional factors of individual children and the nature of instructional programs used in schools (e g skills based or

meaning emphasis) and a lot *more* to do with the differential exposure to opportunities that support literacy offered children outside of school at different economic levels of society. For example, if the literature argues strongly that extensive exposure to print helps to develop reading proficiency in young children (Adams, 1990; Allington, 2001; Anderson, Wilson, & Fielding, 1988; Cunningham & Stanovich, 1991; Snow et al. 1998) and some children go home during the summer to neighborhoods where an estimated 13 titles are available per child and others go home in the summer to neighborhoods where there is only one title available for every 300 children (Neuman, 2001), we may have found a partial explanation for the source of the achievement gap between poorer and more affluent students in this country and this explanation does not have a lot to do with curricular issues.

Rationale for the Study

The economic polarization that Entwisle and her colleagues (1997) document in their book is increasing nationwide. This state of affairs is arguably leading to a widening gap in the educational achievement of more and less affluent children. In Florida, this development is exacerbated by recent changes in school funding policies that have, for all intents and purposes, eliminated full-time summer school programs for primary-aged students. If one accepts the Faucet Theory proposed by Entwisle et al. (1997) as, at least, part of the explanation for why there is a growing achievement gap between lower- and middle-income children, then it is incumbent upon school officials, especially in states like Florida, to explore the feasibility of summer interventions other than traditional summer school programs as a way to provide continuing support for poor students during the summer vacation break when the *faucet* is turned *off*.

This study explores the effectiveness of one such intervention. It asks the question: Can an intervention that provides primary-age students from low-income families the opportunity all summer to read high-quality trade books – ones that are of interest to them and that they can read – stem summer reading loss?

It is an important question because the reading achievement gap between poorer and richer children appears intractable and continues to exist in America's public school system. As the United States economy more and more resembles the shape of an *hourglass* in its distribution of wealth to its families of young children, this achievement gap will naturally continue to follow the same pattern. This is a particularly important question for the state of Florida -- and for other states like it -- that has severely limited the availability of summer school opportunities for struggling elementary school students, most of whom come from economically disadvantaged families (Florida Department of Education, 2001). If summer reading losses play a big role in widening the achievement gap between more and less advantaged students, policy makers and educators need to be looking for ways to support their students' progress during the summer –as well as during the school year—in academically sound and cost-effective ways to narrow this gap.

Research Questions

I examine the phenomenon of the differential access to print among poor children and how this affects summer reading achievement. Unlike many education studies, our study uses a true experimental design (Campbell & Stanley, 1966) in an attempt to determine a strong link between the independent variable *access to books* and the dependant variable *student reading achievement*. As a rule, this type of design is seldom used in a field study because of ethical issues of access and equity. However, as evident in later chapters, I am able largely to avoid these issues in this study.

Based on a review of literature, this study rests on two theoretical propositions

- Children from low-income families, on average, experience few opportunities to read during the summer months largely as a result of limited physical and psychological resources in the home and community

- Children from low-income families, on average experience either an absolute loss or a relative loss in reading achievement during the summer vacation months

The study brings together these two propositions to form three research questions

Because this study uses an experimental design, the questions are stated as null and

alternative hypotheses as follows

Research Question #1

- **H_0**: Students who receive regular access to appropriate books during the summer vacation break will not outperform students who do not receive books on measures of reading motivation

- **H_1**: Students who receive regular access to appropriate books during the summer vacation break will significantly outperform students who do not receive books on measures of reading motivation.

Research Question #2

- **H_0**: Students who receive regular access to appropriate books during the summer vacation break will not outperform students who do not receive books on measure of reading fluency

- **H_1**: Students who receive regular access to appropriate books during the summer vacation break will significantly outperform students who do not receive books on measures of reading fluency

Research Question #3

- **H_0**: Students who receive regular access to appropriate books during the summer vacation break will not outperform students who do not receive books on measures of reading comprehension

- **H_1**: Students who receive regular access to appropriate books during the summer vacation break will significantly outperform students who do not receive books on measures of reading comprehension

Most of the intervention studies in the literature that address this problem concern themselves with the effects of more traditional summer school designs Very few studies have actually created an intervention whereby the explanatory variable is access to print *outside* of the regular school program during the summer vacation break No studies, to my knowledge, have used an experimental design to examine the links that exist between increased access to print and the reading achievement of low socioeconomic children during the summer vacation period

The intervention, called Summer Books! described in this study provided a group of randomly assigned Grade 2 students from a poor rural county in northeast Florida with a steady supply of high-interest, appropriate books that they could select from a bookmobile that visited their homes every week for 10 weeks during the summer vacation period Before leaving for the summer break in May, children were tested on a variety of reading scales tested again when they returned to school in August and tested a third time in December of their Grade 3 year A randomly assigned group of control children, also in Grade 2 was tested at the same intervals, but received no bookmobile visits during the summer months Gains for each group were compared to one another at both posttests to determine if the effect of the intervention on academic growth was statistically significant Gains for each group were also compared to one another to determine the effect of the intervention on the affective measure of motivation to read encompassing students perception of themselves as readers and the value that students placed on reading tasks generally

Overview

Chapter 2 presents a background for our study with a review of the literature germane to its theoretical propositions and of closely related studies Chapter 3 provides a

description of the methods and procedures used in this study Results of our study are reported in Chapter 4 and a discussion of the results is presented in Chapter 5 Implications of the study for policy, research and practice are also discussed

CHAPTER 2
REVIEW OF THE LITERATURE

Introduction

This chapter presents the rationale for this intervention within the framework of four related areas reviewed in the literature

- Summer reading loss
- Children s differential access to print as a function of socioeconomic level
- The role of reading extensively in building reading proficiency
- Matching appropriate books to young readers

Children from less affluent families appear to experience greater degrees of reading loss during the summer vacation periods than do their more advantaged peers At least some of this reading loss appears to be the result of the differential access to print that children experience as a function of the socioeconomic level in which they find themselves Children who have fewer opportunities to read books that are appropriate to their developmental levels are likely to read less than those who are surrounded by opportunities to read appropriate books during the summer months when school is not in session Since it is generally accepted that wide reading leads to more proficient reading, children from low-income levels of society are put at a distinct disadvantage to their classmates who have expanded opportunities to read during the summer months

This chapter also includes an examination and discussion of closely related studies in the literature indicating ways in which this study builds on and extends what preceded it

Summer Reading Loss

Talk to almost any elementary teacher in September and she or he will be testify to the fact that the first several weeks of school must be devoted to playing catch-up with students to make up for the loss that they typically experience during the summer vacation break. But do all children regress over the summer and if they do do they all regress at equal rates across all subjects? It is to these issues that I now turn.

Summer gains and losses. A number of studies over the last three decades have documented what has come to be called *summer reading loss*. However, results have not always converged. Partly the reason for this divergence has to do with methodological issues, specifically the use of different testing intervals, definitions of *loss* of achievement, and possible instrument insensitivity.

Studies looking at gains or losses made during the summer usually contain some instructional time. Tests are often administered several weeks before school lets out and several weeks after school is back in session. The amount of instructional time contained in the testing interval can be critical to a study's ability to accurately estimate a summer vacation's effect on test scores. As the testing interval gets longer, the revealed effect of summer vacation on achievement appears more positive (Cooper, Nye, Charlton, Lindsay, & Greathouse, 1996).

In addition, Gastright (1979) points out that a distinction should be made between *absolute loss* in reading achievement and *relative loss* in reading achievement when measured after the summer vacation. Absolute summer losses occur when a group of children get a lower raw score on the fall administration of a test equivalent to the one they took in the spring. Relative losses occur when a group of children make smaller than expected gains between the spring and fall administration of either the same test or a

test equated to the original test Relative losses represem a comparison of the observed gain with the gain found in some normed comparison group that is, a child may experience no loss in achievement during the summer, but may progress at a rate lower than expected Bernard (1966) cautions that achievement tests are typically standardized by field-testing during one or two months of the year Norms supposedly applicable to other months are then obtained by extrapolation with the assumption that children's growth in achievement follows a straight line of achievement during the ten months of school with no growth during the intervening summer This practice can lead to very misleading results Questions arise as to how it is possible to demonstrate losses or gains on normed tests over any designated period when the norms themselves should take changes into account

Finally scholars (Clay, 2002, Paris, 2002 Robbins & Thompson,1991) warned against the possible insensitivity of traditional instruments to measure reading achievement of young children over short periods, especially for oral reading performance gathered from leveled books or passages Even taking into account these measurement issues, the picture portrayed by the results of the various studies looking at summer achievement is mixed

Several studies that examined summer achievement gains were included in a statistical meta-analysis conducted by Cooper and his colleagues (1996) at the University of Missouri They reviewed 39 studies looking at academic loss during the summer They divided them up into early studies (those conducted prior to 1975) and recent studies (those conducted after 1975) The published earlier studies were of uneven quality and few of them contained enough data suitable for inclusion into a meta-analysis Instead, a vote count synthesis of the earlier studies revealed that the results indicated that losses

and gains varied greatly from subject area to subject area with losses in math and spelling predominant Overall language skills and reading showed gains Counter to findings predicted by regression to the mean phenomenom, several of the comparisons indicated that students who scored lower on tests in the spring lost more during the summer while students with high scores in the spring gained more Only one of the studies in Cooper s analysis looked at the relationship of student socioeconomic status and summer loss Hayes and Grether (1983) found that summer vacation led to reading and vocabulary gains for higher economic students but losses for lower socioeconomic students

One early study with surprising results was conducted by Soar and Soar (1969) They found huge summer gains (3 to 15 months) in grade norms in some students studied, although the test interval included 2 months of school The authors used a sample of 189 middle-class Caucasian fifth and sixth graders and found 33 % of their sample demonstrated over a year s growth in vocabulary and 43 % demonstrated over a year s growth in reading during the summer months To explain these results, the authors posit a "continuum of learners' – some, at one end doing the majority of learning in the classroom under a teacher s direction, and a few at the other end of the spectrum, who learn best on their own

Included in the Cooper et al (1996) actual meta-analysis were 13 studies conducted subsequent to 1975 Analyzing these studies, the authors concluded that, at best, their meta-analysis appeared to demonstrate no academic growth over the summer, at worst, students appeared to lose one month of grade-level equivalent skills relative to national norms when the performance was gauged relative to their fall scores As demonstrated in the prior studies, there were dramatic differences in the effects of summer vacation on different skill areas, with spelling and math computation showing the greatest losses and

reading showing the least. The authors hypothesized that their results might have been conservative as the typical studies of summer effects included five weeks of instructional time at the beginning and end of school that might have served to mitigate the estimated impact of the summer break. "therefore, the effect of summer vacation would likely be more detrimental, perhaps dramatically so, if it were measured from the day school is dismissed to the day students return" (p. 259). Cooper et al. (1996) also revealed a linear influence of grade level on the effect of summer vacation. On average first and second graders showed non-significant gains in reading achievement over the summer relative to national norms, while students in fourth grade showed significant losses. They explained that this disparity in achievement rates over grades might be explained by the floor effect in scaling for the early grades. Highlights of some of the most prominent studies follow – several of which looked at data from compensatory education programs, an amalgam of many different federal programs, practices, and services to largely poor and low achieving students.

Pelavin and David (1977) studied achievement gains in students in compensatory education over the summer in Nebraska and California and generally found losses. The authors were concerned that evaluations of compensatory education programs that only measured achievement change from fall to spring might give larger estimates of the effects of programs than if measured from fall to fall. Using 3800 students in two state compensatory education programs, the authors found remarkable consistency across tests, grade levels, subjects and programs. They concluded that the measurable achievements made in compensatory programs during the year were not maintained over the summer.

The National Institute of Education (NIE) (1978) also looked at the achievement of first and third graders in compensatory and non-compensatory education and took

exception with Pelavin and David's (1977) findings The results of their analysis indicated that changes over the summer favored the non-compensatory education students who demonstrated gains in math and reading unlike their compensatory education counterparts who showed losses in math but up to three months gains in reading. They hypothesized that math especially math computation, is largely learned at school but reading development occurs at school and at home Hammond and Frechtling (1979), though not included in the meta-analyses, also examined much of the data gathered from the NIE study and showed no summer losses in reading, but gains in two of the four comparisons However, some of the data looked at were of students who had participated in summer school programs

Gastright (1979) looked at Title I students in Cincinnati and found that absolute losses in reading occurred in only one of four summer comparisons, but relative losses occurred in three of the four summer comparisons Like Pelavin and David (1977), Gastright did not find that Title I students maintained their appreciable growth found during the school year over the summer

Wintre (1986) on the other hand administered a standardized achievement test to first, third, and fifth graders attending a middle-class Canadian school His analysis revealed there was no summer loss in reading and he actually found significant improvement of overall academic skills during the summer except in math computation in third grade

In 1984, Carter published the Sustaining Effects Study (SES) – a major government sponsored national survey and the largest study of its kind ever undertaken of elementary education The study was primarily concerned with the effectiveness of federal compensatory education programs funded in Title I of the Elementary and Secondary

Education Act and set within the context of regular education The study was initiated in 1975 with 120 000 students in representative samples, over 200 elementary schools throughout the country over three successive years It was funded by the United States Department of Education under congressional mandate. Although much disagreement emerged over the interpretations of the results of the study – perhaps because some of the students in the study attended summer school while others did not – Carter himself drew these conclusions

- There were large reading gains over the summer for all participants and math losses in all of the participants surveyed,
- There were slight relative summer gains favoring regular education students over compensatory education students
- Unlike in earlier studies, regression to the mean artifacts were present with high scorers tending to lose over the summer and low scorers tending to gain, and finally
- There was only a small but positive relationship between the economic status of students and their achievement scores

Kirbanoff and Haggart (1981) reanalyzed the SES data and found that compensatory education students made smaller gains over the summer than non-compensatory education students Overall there were no absolute losses for any type of student (i e general compensatory or Title I) in reading in this analysis

Again using SES data, Bryk and Raudenbush (1988) looked at 618 students over 86 schools who were followed from the spring of first grade to the spring of third grade. These authors found significant declines in summer rates of learning for both math and reading with math rates at zero This no growth in math and slight growth in reading again reinforces earlier findings that reading and verbal skills are learned both in school and at home while math is learned primarily at school

While interpretations from the SES study were at times contradictory Cooper et al (1996) summarize the major findings as follows

- There was no overall evidence of either absolute or relative loss in any of the populations studied
- There was little or no gain in math and less gain in math than in reading
- There were slower rates of gains during the summer for students from poor and minority backgrounds than from more advantaged backgrounds

When taken as a whole, the picture presented by these studies regarding summer reading loss appears to be inconclusive Some studies portray students as losing absolute ground during the summer months (e g Hammond & Frechthling, 1979; Pelavin & David 1977), others appear to demonstrate no absolute losses but loss of ground relative to national norms (e g Bryk & Raudenbush, 1988 Klibbanoff & Haggart 1985) Still other studies provide evidence that some students actually appear to make real progress in reading during the summer (e g., Soar & Soar, 1969; Wintre, 1986) The results are inconsistent at best, and openly contradictory at worst until one views them through the lenses of the socioeconomic background of the students tested These spectacles allow one to view these data from the much more consistent vantage point of the poor/rich summer gap

The Poor/Rich Summer Gap

Summer vacations appear to slow down or even reverse the achievement rates of some students and have minimal or even positive influence on the achievement rates of others. The evidence suggests that summer vacations differentially impact the reading achievement rates of children from families of different socioeconomic groups As will be seen in the following sections, available research indicates that the rate of reading achievement of poor children, as a group declines during the summer while the rate of

reading achievement of more economically advantaged children maintains or even increases during the same time period

Perhaps the first researchers to formally recognize the differential impact of summer vacations on children of different socioeconomic backgrounds were Hayes and Grether (1969) They conducted an analysis of reading achievement and word knowledge scores for 370 000 second through sixth graders attending 600 New York City schools during the school year and the summer They found overall gains in reading and vocabulary during the summer interval for the entire sample However when they disaggregated the data, poorer schools and/or schools serving larger minority populations showed average losses in reading and vocabulary while richer schools showed gains They felt justified in concluding that "in short, very little of the enormous difference in word knowledge performance appears to be attributable to what goes on in school, most of it comes from out of school [and can] be accounted for by the differential effects of summer vacations" (p 64)

Heyns' (1978) study of seasonal differences is probably the best known and the one that first explicated a conceptual framework for looking at seasonal differences in learning. Heyns compared children's academic growth when schools were open (fall and winter) to children's growth when schools were closed (summer) By doing this, she separated the effects of home background from the effects of school, for during the school year both school and home can affect a child s growth, but in the summer only home influences can affect their growth Looking at the scores of thousands of sixth and seventh graders in Atlanta, she found that children's rates of gains made in the school year exceeded those made in the summer and that children's summer gains were inversely related to socioeconomic status Attending school reduces the achievement gap

separating the economically advantaged from the disadvantaged children, but summer learning, which is considerably more dependent on parental status than during the school year results in summer vacations widening the gap in achievement between richer and poorer students She concludes by saying that it is not possible to assume "that the true effect [of income] is constant and of equal magnitude in the fall [after summer vacation] and spring [after school year] Family income is more highly related to fall achievement than to spring scores (p 92)

The good news of the results of Heyns' study was that school effects are largely independent of social class and racial origins, contrary to what had become at that time conventional educational wisdom (Coleman et al , 1966) and that school effects have a substantial independent effect on the achievement of children The bad news, of course, is that summer learning is considerably more dependent on parental status and the gap between the richer and poorer students consistently widens over the summer

Entwisle et al (1997) found conclusions remarkably similar to Heyns (1978) study almost two decades later in their Baltimore School Study (BSS) The authors divided a sample of Baltimore schools into *low* and *high* status schools (20 in each category) depending upon the percentage of children on meal subsidy attending the schools The children were tested using standardized measures on reading comprehension and math concepts in October and May of each year for five consecutive years to obtain winter and summer scores. Their most remarkable and counterintuitive conclusion was that children from both high and low status schools moved ahead substantially at the same rates during the school year in math and reading However, low-income children lost ground in the summer compared to their more advantaged peers Although children's growth decelerated markedly as they progressed through elementary school so that gains and

losses grew smaller each year the seasonal pattern of learning continued through the five-year period While the average test score gains for children in high and low schools during the winter across the five years was virtually the same (193 versus 191 in reading and 186 versus 186 in math), low socioeconomic students gained a total of less than 1 point in reading comprehension and lost 8 points in math across the five summers By contrast, over the same period, high-income students gained 47 points in reading and 25 points in math The authors conclude that "the generally higher level of test scores of the high socioeconomic status children thus accrues entirely from gains made in the summers" (p 35)

Cooper et al (1996), in their meta-analysis of nine recent studies, showed that summer vacations created, on average, an annual reading achievement gap of three months between students from middle- and lower-income families, favoring the students from the more advantaged families To fathom the potential magnitude of this loss one must realize that a summer loss of three months may accumulate over the elementary grades to become an achievement gap of 18 months between poorer and richer students by the end of sixth grade even when children are progressing as expected during the school year Even though some studies have only found small relationships between the economic status of students and their achievement scores (e g, Carter, 1984, Ginsberg, Baker Sweet, & Rosenthal 1981) when the results are broken down between school years and summers the preponderance of data converge to indicate that there are indeed dramatic seasonal differences in learning between poor and wealthier students (Cooper et al 1997 Crowell & Klein, 1981 Entwisle et al 1996 Heyns, 1978, Klibanoff et al , 1981 Turner, 1972)

Most studies of interventions to mitigate the effects of summers on summer reading loss have focused on the potential of more traditional summer school designs However traditional summer school interventions, while widespread, have not consistently produced a record of positive effects on achievement It is to this issue that I turn to next.

Summer School Effects

Although summer reading programs have increased dramatically in some places across America since the turn of the twentieth-first century, they are not regarded as unequivocally successful in narrowing the gap between more and less advantaged students

In the Sustaining Effects Study (Carter, 1984), -- the largest study to date, to look at the effects of summer school -- Carter found no significant differences between those compensatory education students who attended summer school and those who did not When Heyns (1987) reanalyzed the SES data by disaggregating it by socioeconomic status, she found that poor and minority students showed the least academic gain in summer school, with the most severe deficits being found in reading. She did find that African American students who attended summer school gained slightly compared to those who did not and actually suffered smaller losses during the same testing period In her review of traditional summer school programs, she concluded that summer schools do not remedy the problems of struggling poor students but may arrest the declines Others have concurred with this conclusion (Hammond & Frechtling, 1979 Klibanoff et al., 198‡)

On the other hand, other researchers have found academic benefits for poor students in summer school programs Austin, Rogers, and Walbesser (1972), in studying the effects of summer compensatory education programs generally found modest

achievement gains at the elementary level in reading. More recently, the results of large studies in Illinois and Michigan (Kasindorf & Howlett, 2001, Paris et al., in press; Roderick, Nagaoka, Bacon, & Easton, 1999) have suggested that well designed and intensive summer programs can be beneficial for students, especially those in the early primary grades.

Currently, in the state of Florida, however, any evidence arguing for the efficacy of using summer school programs to enhance the academic growth of at-risk students is merely academic.

Reduced Florida Summer School Opportunities

A look at the Florida Department of Educational *Statistical Brief for School District Calendars* shows that in the summer following the 1996-97 school year, 46 of the 67 school districts (69%) offered summer school to their students. Five years later, summer school offerings for the summer of 2001 was 33 of the 67 districts (49%) (Table 2-1). In addition, of those still offering summer school, 23 districts had decreased the number of days offered to students (Table 2-2). In Putnam County, where this research took place, the days of summer school have declined from 24 days in 1996-97 to 20 days in 1998-99 to 15 days in 2000-2001. However, duration of summer school is only part of the picture; the number of classes offered is the other piece. For example, from the summer of 1998 to the summer of 1999, Putnam County reduced classes for Kindergarten through Grade 8 students from 89 classes to 12 (Tables 2-3).

To get at the source for this change in summer school opportunities for students in Florida, one must look at the way the Florida legislature has changed its funding of summer school Kindergarten through Grade 8 in the last five years. Since 1996, dramatic changes have occurred in the way the state has funded summer school in the elementary

and intermediate grades In the school year 1996-97 summer school funding for Kindergarten through Grade 8 was a categorical – that is, it was in a category funded over and above the base state funding allocated each full-time equivalent student (FTE) As a categorical, spending for this summer school was regulated by certain provisi language in the *Florida Statutes* A comparison of the Florida Department of Education *Statistical Reports for the Florida Education Finance Program (FEFP)* from 1996-1997 to 2000-2001 demonstrates the shift In the school year 1996-97 summer school was funded, as stated earlier as a separate categorical In the summer following the school year 1998-99 funding for summer school was "rolled into" a larger, newly created categorical called Supplemental Academic Instruction (SAI) Per statute (F S 232 2246), SAI funds can be used to implement remedial instructional strategies that may include, but are not limited to modified curriculum, reading instruction, after-school instruction, tutoring, mentoring, class size reduction, extended school year *and* summer school How SAI funds are used is up to the discretion of local districts and individual schools For reasons not yet fully understood, many school districts in Florida have opted to use their SAI funds for purposes other than summer school programs As a result, opportunities for academic assistance and remediation during the summer months have been reduced dramatically in the state of Florida in the last five years In the summer in which this research was conducted, the only summer school programs available at the elementary school level in Putnam County were for second-language learners and some special education students who needed summer school to meet the requirements of their Individual Education Plans (IEP) Given the dearth of summer programs to assist children from low-income families, it is expected that the gap between richer and poorer students will continue to grow especially in Florida

Table 2-1 Number of Florida school districts offering summer school by year

1996 to 1997	2000 to 2002
46	33

Table 2-2 Number of Florida districts offering summer school by weeks

Weeks	1996 to 1997	2000 to 2001
6	30	9
4	16	20
3	0	4

Table 2-3 Putnam County summer school FTE by year

1996-1197	1999-2000
351 47	113 12

Note FTE denotes Full Time Equivalent student for 180 days, 6 hours a day it does not represent 'warm bodies' in summer school programs

Differential Access to Books across Socioeconomic Levels

Evidence reviewed in the prior section strongly suggests that children from different socioeconomic backgrounds experience different rates of academic growth in reading during the summer months that may account for some, if not most of the achievement gap between less and more economically advantaged youngsters But why does poor children's reading development during the summer months routinely lag behind that of their more advantaged peers?

A number of interrelated factors can and probably do explain this phenomenon The socioeconomic status of families is directly related to the income of families and the educational levels of the parents. During the summer months when schools are closed, some homes have the resources to provide students with the opportunities to continue to learn outside of school and others do not Entwisle et al (1996) coined the term of Faucet Theory to describe this phenomenon The authors use this term to describe the

differential impact of family status on students' summer academic growth when school is not in session

> When school is in session, the faucet is turned on for all children, the resources children need for learning are available to everyone, so all children gain. When school is not in session, children whose families are poor stop gaining because for them the faucet is turned off. The resources available to them in summer (mainly family resources) are not sufficient to promote their continued growth. (p. 37)

The authors explain that better-off families typically travel and go to museums, science exhibits, and sporting events. They buy their children games and computers, and send them off to summer camp and music lessons. If their children are experiencing academic difficulties, they acquire tutors for them or send them to commercial learning centers.

Generally, families at the highest level of the economic spectrum are also the most educated (Nieto, 2000) and hold higher expectations for their children than do less educated parents. That is, parents who have earned college degrees are more likely to expect their children to attend college and make higher marks in school than are the parents of high school graduates. Parental expectations are strong predictors of school marks, test scores, retention, and drop-out rates (Entwisle et al., 1996). Even when parents from different backgrounds hold similar education goals for their children, poorer parents do not have the skills or the resources at their disposal for helping their children at the same level that wealthier parents do (Lareau, 1989).

One dissenting voice on this view is Harste, Woodward, and Burke (1984). In their award winning book, *Language Stories and Literacy Lessons*, the authors failed to distinguish between any groups of students based on sex, race, or socioeconomic status. They encountered parents with few resources that valued literacy and provided rich literacy environments for their children. They also found affluent parents who regularly

left their children in the care of baby sitters or at nonacademic day care centers and spent little time cultivating a literacy environment for their children. They also claimed that it was not the quantity of literacy materials available in a home (e.g., the number of books in the house), but the accessibility of the materials to children.

Despite this dissenting view, most educators realize that a preponderance of evidence now suggests that there are huge quantitative and qualitative differences in verbal communication between parents and young children in different strata of society (Hart & Risley, 1995) and in the exposure of children to literacy practices (e.g., storybook reading) valued in school (Adams, 1990; Heath, 1982; Ortiz, 1986; Teale, 1986; Trelease, 1995; Wells, 1986).

These factors help to explain why children from families of low socioeconomic levels of society arrive at school with verbal and math skills at low levels which in turn become strong determinants on the trajectory of their future achievement patterns -- patterns that have shown remarkable resistance to change (Coleman et al., 1966; Campbell, Reese, O'Sullivan, & Dossey, 1996; Stanovich, 1986).

All of these factors represent potential sources of summer reading loss in poor children and provide explanations for the widening poor/rich gap that occurs as children progress through school. However, another potential and potent source of reading loss might be the differential access that children from different families have to appropriate reading materials during the summer months (Allington & McGill-Franzen, in press) and the resultant impact on voluntary reading.

Children's Access to Books during the Summer Vacation

Brofenbrenner (1979), in his article on the ecology of human development pointed out that learning and development cannot be considered apart from an individual's social

environment for cognition is situated in the social and physical context of the child (Vygotsky, 1962) that occurs in "nested," overlapping systems. Research in early literacy has tended to focus on the immediate setting, for example, instructional features of the classroom, book reading habits, and family characteristics, but not on the larger availability of print materials for the child, especially outside the school context. And yet, although Americans live in a generally literate culture, there is pervasive evidence of wide and sometimes dramatic disparities in print access available to students in schools and communities (Elley, 1994; Cunningham & Stanovich, 1991; Delpit, 1988; McQuillan, 1998). If it is true that the amount and quality of students' access to reading materials is substantially related to the amount of reading they engage in, which in turn, is a strong predictor of reading achievement (Allington, 2001; Anderson et al., 1988; Krashen, 1993; Morrow, 1985), then this unequal access may explain some of the discrepancy in reading rates that occurs over the summer between students from families of different economic status. Unequal access to print may occur in classroom, school, and public libraries, and homes and neighborhoods.

Differences in Library Access

McQuillan (1995) looked at the relationship between library adequacy and student achievement. He found library adequacy to be the best predictor of reading achievement on the National Assessment of Educational Progress (NAEP). McQuillan measured the amount of print access and the frequency of reading by state to see how state rankings on the NAEP compared to reading performance. Print access in this study was defined as consisting of the three likely sources of reading matter: home, school library, and public library. Even statistically controlling for the effects of poverty, McQuillan found a strong and positive effect of print access on reading performance.

Large-scale studies conducted in international settings showed similar strong effects of print access on reading performance. Even controlling for the economic differences in several countries, Elley (1996) concluded that print access was the most powerful correlate of reading achievement in the subjects he surveyed, with the size of school libraries being the number one factor distinguishing reading scores of nine-year olds.

While large-scale survey data strongly suggest the link of print access to reading performance, smaller, descriptive studies of library access and quality reveal yet another facet of the picture for libraries, that is, library services are not always equal across communities. Looking at twelve New York state school and classroom libraries, six of which served poorer children and six of which served more affluent children, Allington, Guice, Michaelson, Baker, and Li (1996) found wide variations in the number of books available to different classes of students favoring more affluent neighborhoods. The authors found that high income neighborhood schools had an average of 21.5 books per student, while low income schools had only 15.4 books per student. Disparities also existed in the size of classroom libraries, the number of magazine subscriptions in the school libraries, and the leniency of library access policies, all favoring wealthier schools and neighborhoods.

LeMoine, O'Brien, Brandlin, and McQuillan (1997) found that school libraries in upper class areas allowed greater access to books, more time to read in school, and had more liberal check-out policies. By way of contrast, Krashen (1997/98) found that children in high poverty schools often face severely restricted access to the few services that libraries do offer: some are not even allowed to take books home. Similarly, in schools, substantial differences have been found between low- and high-socioeconomic classrooms in the amount, type, and uses of print (Duke, 2000, Smith, Constantino, &

Krashen, 1997) Duke (2000) investigated the differences in the print environments and experiences offered to children in 20 first-grade classrooms chosen from very low- and very high-socioeconomic status districts Data indicated that there were substantial differences between the classes in all major areas examined including the amount, type and uses of print

Differences in Homes and Neighborhoods

Feitelson and Goldstein (1986) looked at low socioeconomic families whose children were in lower performing schools and compared them with high socioeconomic families whose children were in higher performing schools in Israel The authors found that the better-off Israeli families had ten times the number of books in their homes as found in the home of children from lower performing schools They also pointed out that the actual discrepancy between the types of families was even larger than the data indicated because a full 61 % of the poorer families they studied had no books at all in their homes

Other international studies have surveyed the number of books in children's homes and correlated this to student achievement Elley (1994) surveyed nine- and fourteen-year old students from 32 countries He found huge disparities in ownership of books among classes of families that correlated positively with their children's reading achievement those homes in which were found substantial numbers of books were those homes in which children demonstrated the best reading achievement

Raz and Bryant (1990) looked at access to print available in the homes of American middle-income and low-income families even before children in the family began to read independently They found that the former owned three times as many books as the latter and made monthly library visits three times as often as low-income families Halle

Kurtz-Costes, and Mahoney (1997) upon examining a group of African American families, found that the only behavioral measure on the part of the parent that correlated significantly with the reading scores of the children was the number of books in the home even after controlling for the level of mother s education and previous reading scores

One of the studies to produce the most dramatic results in the area of differential print-access was done by Smith et al (1996) The authors surveyed the homes of 40 students in two economically depressed and one very affluent community in Los Angeles Compton, Watts, and Beverly Hills Looking at the average number of books in the home, and classroom, school and public libraries, they found that the average child in Beverly Hills had more than three times the number of books in his or her *home* as the average child in Watts and Compton had in his or her *classroom library* at school

The most comprehensive examination of the differences of access to print across different classes of neighborhoods was conducted by Neuman and Celano (2001) In their in depth, ecological study of four neighborhoods – two lower income and two middle-income – they looked at multiple categories of access to print (1) the quantity and selection of books available to be purchased, (2) the amount and quality of environmental print displayed, (3) the availability of public areas where children might observe people reading, (4) the quantity and quality of books in local day care centers, and (5) the quantity and quality of books in local public and school libraries Results of the year long analysis revealed startling differences in children s potential access to print in all categories across neighborhoods of differing incomes favoring middle-income children In analyzing their data, they found that middle class children were virtually "inundated" with multiple opportunities to use, purchase and observe people with books They

estimated that 13 titles were available per child in middle-income communities. Tallying the number of children's books available in the various communities, they found that over 16,000 books could be purchased in the most affluent community. In contrast, a dearth of opportunities to interact with print existed for children in poorer neighborhoods with only one title available for every 300 children. Again, tallying the number of children's books available, they found only 55 books available in the poorest community. Their results spoke not only to the number of resources available to children but to the choice and quality of materials as well. Their study documents how differences in economic circumstances can translate into extraordinary differences in availability of print to children at different economic levels of society. They conclude with this:

> Therefore, if access to print is highly differentiated in our culture, it may lead to differential opportunities for certain types of learning and thinking that are related to literacy development. Different access could influence the degree of familiarity with book language and cognitive behaviors associated with reading. (Neuman and Celano, 2001, p. 11)

If access to print is correlated positively to free reading that is, in turn, a positive predictor of reading achievement, then children's differential access to appropriate reading materials during the summer may go a long way to explaining the source of the poor/rich gap that exists for American students. But, does more reading actually lead to increased proficiency in reading, and if so, what are the processes underlying this relationship? It is to an examination of the effects of extensive reading on reading proficiency that I now turn.

Extensive Reading and Reading Proficiency

There has been wide-spread agreement in the literature on reading that encouraging students to engage in wide, independent, silent reading increases reading achievement (Allington, 2001; Anderson et al., 1988; Cipielewski & Stanovich, 1992,

Cunningham & Stanovich 1991 Elley & Mangubhai 1983 Neuman, 1999; Taylor Frye, & Maruyama, 1990 Walberg & Tsai 1984) The National Reading Panel in their 1998 review of the research on reading indicated that "there are literally hundreds of correlational studies that find that the best readers read the most and the poor readers read the least These correlational studies suggest that the more that children read, the better their fluency, vocabulary, and comprehension" (p 12) The literature suggests that if children are to become fluent readers who have acquired extensive vocabularies and are able to comprehend at deep levels they must read a lot that is to say the volume of reading must be substantial to afford them the practice to develop these skills

Volume of Reading

As early as 1980 Greaney found a positive relationship between self-reported leisure reading and students' reading achievement – a relationship that was reconfirmed in subsequent years (Foertsch, 1992, Walberg & Tsai 1984) Greaney (1980) also discovered that there were great disparities between elementary children in the amount that they read at home Anderson et al (1986) drew a similar conclusion when they found that the children in the 90th percentile of their study read 200 times as much as the children in the 10th percentile of their study Both Greaney and Anderson et al , however, found that most children, on most days, did little or no book reading at home Those that did, however appeared to be better readers than those that did not

Programs that have "flooded" classrooms and day care centers with high quality children's books to increase volume of access to print has also shown increases in various indicators of reading achievement (Elley & Mangubhai 1983 McGill-Franzen Allington, Yokoi, & Brooks, 1999 Neuman, 1999) Using a sample of 380 intermediate students in eight rural Fijian schools, Elley and Mangubhai (1983) provided each class

with 250 high-interest storybooks in English Results after eight months were compared to pupils who had followed the normal structured English language program which put little emphasis on reading They found that students exposed to many stories progressed in reading and listening comprehension at twice the normal rate McGill-Franzen et al (1999) found dramatic results when kindergarten classrooms were flooded with high quality books and teachers also participated in 30 hours of professional staff development focused on using books effectively with their students The children whose teachers received books and staff development significantly outperformed other comparable kindergarten classes

Fluency and Extensive Reading

Before readers can process what they read at higher levels (i e , comprehend what they read), they must be able to get the words off the page – a process called word recognition (Nathan & Stanovich, 1991) Part of being a skilled reader is the ability to recognize words rapidly and accurately and read with expression (i e., prosody) This is called fluency Rapid and automatic word recognition that leads to fluent reading depends largely on the frequency with which a child has been exposed to a particular word and has met success in identifying it (Adams, 1990 Ehri 1995 Juel & Minden-Cupp, 2000, Pressley, 1998, Snow et al , 1998, Spear-Swerling & Sternberg, 1995) Experience with print builds fluency and automaticity, and experience can only come through reading large quantities of manageable text (Allington, 2001, Donovan, Smolkin, & Lomax, 2000 Fountas & Pinnell 1996 Rasinski, 2000)

Vocabulary, Comprehension and Extensive Reading

There is substantial agreement among researchers that reading is a significant contributor to growth in vocabulary (Cunningham & Stanovich, 1991 Krashen, 1989

National Reading Panel, 1998, Nathan & Stanovich, 1991, West, Stanovich, & Mitchell, 1993). Krashen (1989) in his 'input hypothesis," posits that wide reading in the form of comprehensible input is the single most important contribution to vocabulary growth.

It has been estimated that the average child learns between 2000 and 3000 words a year (Beck & McKeown, 1991) that cannot be entirely or even mostly accounted for by explicit vocabulary instruction. Instead, Beck and McKeown conclude that the "high rates of vocabulary growth seen in many children occur through immersion in massive amounts of rich written and oral language" (p. 280). The lexical richness of print as opposed to speech, may have an effect on subsequent vocabulary development in children. Hayes and Ahrens (1988) in studying the percentages of rare words contained in various categories of language, found the print in children's books contained 50 % more rare words than did adult prime-time television or the conversation of college graduates. How much vocabulary a child actually gains from print depends, among other things, on the volume of a child's exposure to written language.

Learning from context takes place in small increments, but even a small amount of word knowledge can result in large-scale vocabulary growth if the child does a sufficient amount of wide reading. Nagy, Anderson, and Herman (1987) investigated the incidental learning of word meanings from context during normal reading with students in Grades 3, 5, and 7. They found small but reliable gains in knowledge of words read from passages across all grade and ability levels even after a delay of six days. Although students amount of learning from context appeared minimal (5 %), the authors speculated that this could represent the learning of approximately 800 to 1200 new words a year if the volume of reading of the children was substantial (about a million words a year).

Vocabulary knowledge and levels of comprehension are closely associated. In research, measures of vocabulary are often used to indicate growth in reading level as the level of vocabulary is highly predictive of level of reading comprehension. Acquiring new vocabulary from text often involves learning new concepts as well as new labels. Thus increased conceptual knowledge leads directly to higher levels of comprehension as an individual's knowledge base is expanded leading to more efficient processing of information (Bjorklund, 1995; Chi, Hutchinson, & Robin, 1989). Krashen (1993) found that in those studies where students were assigned more reading in school, they generally did as well or outperformed on reading comprehension tests those students who did not have the added reading time.

Underlying Processes

While it is generally accepted that wide reading correlates to increased fluency, vocabulary acquisition, and levels of comprehension in children, much less has been said in the literature identifying theories to explain the underlying processes that link reading proficiency so strongly to volume of reading. Three theoretical frameworks are useful in understanding the link between volume of reading and reading proficiency and how they may ultimately affect the achievement gap between students from different socioeconomic backgrounds: automatic information processing theory (LaBerge & Samuels, 1974), the theory of *Matthew Effects* in reading (Stanovich, 1986), and the self-teaching hypothesis (Share and Stanovich, 1995).

Automatic information processing theory

In automatic information processing theory (LaBerge & Samuels, 1974; Perfetti, 1995) humans possess sensory registers that allow them to receive auditory, visual, and haptic input from the external environment through their sense organs. Some of this

input makes its way to the working memory that has a very limited capacity Some tasks usually due to extensive practice are processed automatically others involve the allocation of attention and working memory mental resources for their completion This central assumption of the limited capacity of the working memory stands at the heart of this theory According to automaticity theory a fluent reader decodes text automatically that is, without conscious attention – thus leaving attention free to be used for comprehension. Beginning and struggling readers, on the other hand, are nonautomatic – decoding words requires most of their attention, and mental resources are not available for the higher order process of comprehension

When a child encounters the stimulus of print, visual processes trigger phonological, semantic and orthographic knowledge about the words stored in the long-term memory (Adams, 1990) Skilled readers have a vast over-learned repertoire of knowledge about written text and as a result are able to process text quickly and holistically using few working memory resources (Walczyk, 2000) With repeated practice and exposure to words in text children recognize more and more words automatically and, as a result have more resources to devote to comprehending what they are reading Thus, children who read a lot tend to become more adept at recognizing words rapidly which leads to more fluent reading which in turn leads to increased levels of comprehension. Samuels (1979/1997) uses this early theory to support the well-established practice of repeated readings to build fluency and improve comprehension Automatic information processing theory neatly accounts for the relationship between engaged time on task and reading achievement that Fisher and Berliner (1985) discovered almost two decades ago

Matthew effects

The issue of volume of reading impacting reading proficiency can also be looked at through the lens of Stanovich's (1986) theory of Matthew Effects. The name of this theory is coined from a reference to St. Matthew's gospel (13:12) that states *for to those who have, more will be given, and they will have an abundance: but from those who have nothing, even what they have will be taken away.* According to this theory, children who have had limited exposure to print do not develop the same level of proficiency as their more advantaged peers. Whether through an inherent predisposition in the child or as the result of environmental disadvantage, children who do not find reading easy tend to eschew the activity. As poorer readers, they tend to lose motivation for reading that also affects the amount of practice they get in reading (even when print is available). The decrease in practice leads to continued difficulty in reading which, in turn, results in lowered expectations from teachers and parents. These lowered levels of expectations, motivation, and practice exacerbate the child's initial reading difficulties. Stanovich goes on to say that the act of reading itself further develops some cognitive abilities (e.g., vocabulary acquisition, conceptual knowledge, familiarity with genre). Language structures to which children are exposed in print are a source of exceptionally rich stimulation (Hayes & Ahrens, 1988; West et al., 1993), especially in the lexical and syntactic areas. Children with limited print exposure, according to this theory, are placed at a distinct disadvantage to their more advantaged peers as they face a continued diminution of reading and other cognitive functioning.

Self-teaching theory

Stanovich and Share (1995) developed a model of "self-teaching" that focused on the accurate reading of many and varied texts. With repeated exposures to the letter

patterns common to the English orthography beginning readers develop rapid word recognition and fluency According to this theory adequate decoding skills, in and of themselves, do not ensure the development of reading proficiency but extensive reading provides the opportunity to consolidate previously taught skills (e g decoding)

It has been strongly suggested that children need extensive practice in reading to build their proficiency in reading It has also been recognized that extensive practice cannot occur unless children have adequate access to print especially in their homes and communities when school is not in session Access to books is important, but not all books and reading materials are equally appropriate for building the skills to be a good reader Matching readers to appropriate books is the subject of the next section

Matching Appropriate Books to Readers

Two decades of research have demonstrated the strong and positive association of successful reading experiences to better reading progress (Allington, 2001, Berliner 1981 Taylor et al, 1990) Successful reading is contingent upon among other things, the manageability of the texts that the child is expected to read, and the child s motivation to read the text

Text Manageability

Texts in the field of reading have typically been construed as being at the independent, instructional, or frustration level (Betts, 1946) of a student A child reading a book at an independent (easy) level reads easily and fluently without assistance One reading at an instructional level can read satisfactorily with assistance, that is, read within one s Zone of Proximal Development (Vygotsky 1962) However when a child reads at the frustration (hard) level there is a breakdown in word recognition and comprehension,

even with assistance Designations of texts as *hard* or *easy*, of course, are always relative and are always from the perspective of the reader

As early as 1971, Marie Clay, through her observational research, revealed that good readers are often placed in "easy" reading materials while poor readers are often placed in "hard materials for reading instruction The result is that poor readers do not have the conditions that lead to the development of traits and skills associated with good reading (Allington 1977, McGill-Franzen, 1993, Rog & Burton, 2002) and may be less engaged during the reading process (Gambrell, Wilson, & Gantt, 1981) A combination of lack of practice, deficient decoding skills, and difficult text result in early unrewarding experiences for poor readers that lead to less involvement in reading and related activities (Nathan & Stanovich, 1991) By contrast, when a child reads what Fountas and Pinnell (1999) refer to as 'just right" books – books that have the right mixture of support and challenge (i e , books at a child's instructional level) – the reading task remains well within the control of the child Children who read books that are manageable, and thus appropriate have a higher sense of self-efficacy about the reading task before them than if the task is too difficult This positive belief in their own competence to successfully complete the task leads to more engagement and increased levels of motivation (Gambrell, Palmer Codling, & Mazzone, 1996, Pressley 1998 Wigfield, 1997) – a key ingredient to voluntary reading

The issue of text manageability is a complex one Heibert (1999) points out that historically beginning reader texts were often created using a single criterion high frequency words, phonetically regular words, predictable language or natural language Each type of text has its own advantages but its disadvantages can increase the difficulty of the task of reading Heibert suggests that, at least in the early stages of learning read,

students find texts most manageable that allow them opportunities to apply the alphabet principle, recognize high frequency words, and use the knowledge of their oral language to validate meaning. As stated earlier, Fountas and Pinnell's (1996) criteria for leveling books is broad, based on many aspects of the reading task including degree of illustrative support, theme, word count, text structure, and vocabulary. Within any one level, some books will be more manageable for some children than for others.

Motivation

Providing children with books that are manageable from a readability standpoint is only the first step in encouraging children to read voluntarily in their spare time. The emotional response that children bring to the reading task is the primary reason that readers read and nonreaders do not (McKenna & Kear, 1990). Every observant teacher has seen the highly motivated reader engrossed in a book that, for him or her, is obviously of considerable difficulty, but because interest and engagement is high, the child persists (Hunt, 1970/1996). This persistence in the face of challenge comes from being highly motivated and confirms what Mary Joe Fresch (1995) means when she says that "a reluctant reader is a child for whom adults have not been able to find a good enough book" (p. 225). Motivation is critical to getting children to read voluntarily.

Deci and Ryan (1985), in their investigation of intrinsic motivation, stated that beyond self-perceived competence, a child's sense of choice relative to the task, is critical for creating the conditions whereby a child wants to read, not just is able to read. There is a substantial quantity of research that suggests that when a child is given the opportunity to control what, when, and for what purposes he or she will read, engagement and motivation increase (Lamme, 1976; Morrow & Weinstein, 1986; Moss & Hendershot, 2002; McGill-Franzen, 1993; Turner, 1995). Generally speaking, children

will be most motivated to read books that they can read successfully and that are of inherent interest to them

Contemporary and Closely Related Studies

The previous overview of the literature suggests that degree of print exposure is strongly correlated with various reading skills, which is to say that superior readers have been found to read more than less able readers, but there remain persistent questions that have not been conclusively resolved by the research community on this matter A positive link between the amount of reading that a child does and his or her reading achievement certainly exists But, correlation does not prove causation -- the relationship between the amount of print exposure and children's reading ability may not just move in one direction Could it be, for example, that better readers simply choose to read more than less able readers? Do students who are already good comprehenders tend to read more, thus spurring further increases in reading comprehension abilities and increasing the achievement differences between them and their less competent peers? And do those children who choose to read widely, but only read "easy' books substantially improve their vocabulary and conceptual knowledge versus those students who accept more challenges in their reading? Certainly avid readers tend to be different from nonreaders on a wide variety of behavioral habits and background variables that invite inordinately large number of alternative explanations to this link between reading proficiency and voluntary reading

Taylor et al (1990), in their review of research on time spent reading and reading growth surmised "the literature contains surprisingly few studies that have actually found significant relations between time engaged in silent reading and gains in reading achievement" (p 353) They then reported on their own study (also correlational) that

concluded that time spent reading at home did not contribute to growth in reading achievement though time spent reading in school did

Of the "literally hundreds of correlational studies" looking at the relationship between voluntary reading and reading proficiency, the National Reading Panel (1998) found only 14 studies that met their very strict research review methodology criteria (i.e. ones that used an experimental or quasi-experimental design with a control group, or multiple baseline measures). They looked at school programs intended to increase the volume of voluntary reading and found that such programs did not reliably increase how much students read. Although they could not conduct a meta-analysis of these studies because of the variation in methodological quality they concluded that they were unable to find a causal relationship between such reading programs and reading achievement gains. They conclude by saying

> In other words, even though encouraging students to read more is intuitively appealing, there is still not sufficient research evidence obtained from studies of high methodological quality to support the idea that [school-based incentive programs] reliably increase how much students read or that such programs result in improved reading skills. (p 13)

Although evidence suggests that "flooding" classrooms with high quality trade-books helps second language learners to acquire literacy (see Elley & Mangubhai, 1983) and improves some literacy skills in pre-kindergarten children (Neuman, 1999) others studies indicate that print exposure may be necessary but not sufficient in and of itself to further reading development (Ingham, 1981, McGill-Franzen et al. 1999). Still, other studies offer counter-intuitive evidence on the negative correlation between amount of reading aloud to children and reading achievement (Meyer Stahl Linn, & Wardrop, 1994, Senechal, LeFevre, Thomas & Daley 1998)

The few studies that look at interventions to mitigate summer reading loss by providing children access to appropriate books do not help to clarify matters in this regard, and continue to raise the specter of alternative explanations for the link between wide reading and improvement in reading achievement. Of the four studies that examine the impact of providing books to children during the summer on subsequent reading achievement measures, none of them conclusively answers the question *Does increased print exposure during the summer lead to (i.e. cause) improvements in reading?* This question must be answered satisfactorily if practitioners are to create the conditions during the summer that help to decrease the achievement gap between more and less advantaged students. Of these four studies, one had a "pre-experimental" design and three had designs that were "quasi-experimental." The following is brief description of each, the results of which are summarized in Table 2-4.

The study with the pre-experimental design was conducted informally by Willman (1999), an elementary reading specialist. She chose and sent three books (two fiction, one non-fiction) home with each of her 30 remedial readers to read during the summer. In June, before leaving school for the summer, the children were administered an informal reading inventory as a pretest. In September, they were administered the same test upon returning. Willman instructed her children to call her on her voice mail and either read to her for three minutes on the phone or summarize a chapter from one of their books. She received 92 calls during the summer from the 26 students who participated. Of those post-tested in September, none lost ground in their reading achievement, and one increased by a half year.

This study, while intuitively very appealing, is fraught with numerous threats to internal validity (e.g., history, maturation, testing, statistical regression) (Campbell &

Stanley 1966) that make its conclusions linking summer reading and the stemming of summer reading loss in remedial students unreliable Because there was only one group involved in the study any number of change producing events may have occurred during the summer (e g., biological maturation, family vacations) that may have provided a plausible rival hypothesis to explain the results of the posttest Willman does not carefully describe her sample, but references to at least one of the children calling in from his" vacation home on the cape" incline the reader to believe her students were generally middle-class who perhaps enjoyed the literacy rich summer experiences so common to middle-class children

Crowell and Klein (1981), in their work with the Kamehameha Early Education Program (KEEP) in Hawaii noticed that summer losses in reading were found more frequently in children from low-income backgrounds than from middle and upper middle class families They conjectured that this might be the result of the paucity of reading materials in the home and few opportunities for students to be read to by adult family members

To test this assumption, they selected 50 first and second grade students from low-income urban homes The children from each class were ranked according to their reading scores and teacher judgment and then assigned alternatively to either the treatment or control group Each child was mailed one "easy" book a week for 10 weeks by the researchers A standardized test was administered a few weeks before the end of school and an alternate form of the test was administered during the first month of school, giving a testing interval that included nearly two months of classroom instruction The authors found small gains in total raw scores for all groups However after controlling for pretest differences, they found significant gains in vocabulary for Grade 1 favoring

the treatment group but no difference at the Grade 2 level For comprehension scores, no significant differences between the experimental and control group for either class were found Sight word losses were shown for all groups, but the first grade treatment group showed significantly less loss than the control although the second grade control group showed less (but not significant) loss than the treatment Overall, first graders fared better than second graders in the treatment group of the study

In 1991 Robins and Thompson conducted a quantitative and qualitative analysis of the reading achievement of 164 first through sixth grade students who attended a library sponsored summer reading program Students were administered a standardized test in March before school was dismissed for the summer and these scores were compared to scores of the same test administered to students in August when they returned from vacation – for a testing interval of five months that included three months of instruction. The differences in the pre- and posttests of the students who participated were compared with the pre- and posttests of a control group of 16 "similar" students who did not participate All participants in the study were average or above average in reading ability Participants visited the library at least weekly, checked out self-selected books, and earned points according to the number and type of books they read Points ranged from five points for a pre-school picture book to 25 points for an Accelerated Reader selection No computerized tests were administered upon finishing books as is customary for this type of program Instead, points were awarded on the "honor system " Points earned could be exchanged for one of a wide choice of items ranging from a bookmark (worth five points) to a fast food meal (worth 100 point) Parents could earn points for reading to their children and small children could earn points for having a book read to them.

The results of the overall program were dramatic in terms of participation Between 1985 and 1989 participation in the library reading program increased over 1000 percent with the most recent participants reading three times as many books as earlier participants under a different reading program format (i e one with no incentives) In terms of student achievement gains, the results of the program were anything but dramatic After a comparison of reading achievement levels in the spring and fall the authors found significant increases in vocabulary for both the total participant and total control group with significant decreases in comprehension at the Grade 5 level for the participant group In general, the data from the study showed no significant changes in reading achievement levels during the summer for either group with both participant and control groups, on average, maintaining their reading achievement levels from spring testing to fall testing The authors themselves raise questions about their results based on the small number of students in the control group and the possible insensitivity of the standardized test to register true gains in the "short" interval between the administration of the pre and post-tests (Clay, 2002)

Both Crowell and Klein (1981) and Robins and Thomson (1990) did not use equivalent control groups in their studies Crowell and Klein s subjects, at least, were matched on reading achievement, but could not necessarily be considered equivalent in other areas Robins and Thompson's control was so small as to make its results almost negligible. In addition, although the students in both their groups were described as "similar' there is typically a self-selection process that occurs between voluntary participants and non-participants that might offer alternative explanations for the results (see Dooley 2001 for a complete discussion of sampling and data collection bias) Finally the unusually long testing interval in this study (March to August) included at

least two months of instruction that may have inappropriately skewed the results Even if these methodological problems were resolved, neither study offers conclusive results regarding the positive impact of voluntary reading on summer reading achievement

Carver and Liebert (1995) investigated the effects of reading trade books upon gain in reading achievement when books selected were controlled for by level of difficulty As part of a 6-week summer school program, 43 students in Grades 3, 4, and 5 read library books each day during a 2-hour class Students appeared to come mostly from urban schools serving middle- and low-income families. Half of the group read books that were designated to be slightly above their reading level (matched) and the other half of the group read books designated slightly below their reading level (easy) Although students were randomly assigned to experimental groups, there was no control group The authors hypothesized that students can improve their reading level by reading books at a somewhat challenging level, but not at an independent (easy) level

Five days a week for six weeks, students in the program picked from a limited supply of leveled books that were designated at or below their level (easy group) or at or above their level (matched group) and had points assigned to them based on their level of difficulty Students took a computerized test on each of the books they read If they passed the test (four out of five questions correct) they could redeem their book points for coupons for tangible goods, usually pizza, tacos, or ice cream The authors estimated that participants in the study spent 15 30 hours reading books

Students were pre-tested in May and post-tested in July on alternate forms of an author created instrument to measure vocabulary and rate gain, which were intended to be a proxy for total reading achievement No solid evidence was found indicating that either group gained in reading ability as a result of the summer book intervention

program Although the authors had speculated that students were able to improve their reading by reading books at their instructional level they found no substantive evidence that children reading matched books improved more than those reading easy books After the first study the authors conducted a reanalysis of the readability level of the books they used and discovered that all of the books used in the study were at the "easy" level for all of the students; there was essentially no difference between the books on readability levels that the two groups used except length

At least two concerns must be raised about this study First, the authors did not describe their sample well enough to draw clear conclusions from the results of the study Specifically they did not say whether their subjects were experiencing reading problems (the achievement band from which they were selected was very broad) In addition, although we are told that students were pulled from more and less affluent schools (two urban, two suburban), we have no specific demographic data on the actual sample used We know from earlier reviews, that the educational summer opportunities of children from different classes of society are often disparate, favoring more advantaged youngsters The results of "no gain" in reading achievement could also be interpreted as "no loss" In this case, maintenance of achievement scores in poor struggling reader might be deemed a success at stemming summer reading loss

Second, two treatment groups were used employing three grade levels Even using very liberal estimates of effect sizes, significance levels, and power, the sample size of the study should have utilized, at a minimum, at least 180 students (Shavelson, 1996) The actual sample size (N=43) was just too small to provide the stable means necessary to draw firm conclusions Carver and Liebert's study is best thought of as a case-study that provides very interesting and even insightful information about the link between

reading achievement and practice in reading, but its sample is too small to permit their conclusions to generalize to other populations of students.

The results of the preceding studies are helpful in thinking about the efficacy of providing opportunities for access to print to children during the summer and their consequent impact on reading achievement. At the same time, results are inconclusive about this impact, both because of the methodological problems inherent in the studies and because their results are contradictory (Table 2-4). They did however provide some help through examples and non-examples in establishing guidelines for my own study that looks at the effect of summer reading on curbing the reading loss of young children from high poverty families. While much of the literature on summer reading loss points to the strong inverse relationship between children's socioeconomic status and summer reading achievement, well designed studies are needed to provide empirical support for the position that increased access to appropriate books for low-income children during the summer offers a viable means for stemming summer reading loss. I hope to do that in this study. Through the use of an experimental design, I intend to avoid some of the internal validity threats that have plagued studies studying this issue and to extend the field's knowledge of the impact of print access on the summer reading achievement of children from low-income families. I pose three research questions:

1) Does an intervention that provides increased access to appropriate books to primary age children from low-income families significantly improve motivation to read when results are compared to those of a comparable group of children who receive no increased access during the same period?

2) Does increased access significantly improve the reading fluency of these students who receive books versus those who do not?

3) Does increased access significantly improve the reading comprehension of these students who receive books versus those who do not?

Summary

Evidence is mounting that children from high poverty families, on average, experience less reading achievement growth over the summer than do children from more affluent families. Children from these poorer families also have, on average, much less access to appropriate, well matched books to read in their homes, daycare centers, and neighborhoods in the summer months which may lead to less voluntary reading. Voluntary reading has been associated with increased levels of reading achievement. An overview of the relevant literature strongly suggests that the summer reading loss in poor children may be directly linked to the differential access they have to appropriate reading materials outside of the school setting. However, the results of the few studies describing interventions that provide children with books during the summer (outside of summer school programs) are inconclusive, suggesting that access to books is but one of several variables that affect the reading achievement of students during the summer vacation break.

Table 2-4 Results of the effects of summer book interventions on reading achievement from spring to fall testing

Author	Year	Sample size	Grade	SES*	Achievement level	Findings	Content area
Willman	1999	26	Elem	N/A**	Remedial	Maintained	Comprehension
Crowell & Klein	1981	50	1-2	low	N/A		
			1			Gains favoring treatment***	Vocabulary
			2			No difference	
			1			No difference	Comprehension
			2			No difference	
			1			Gains favoring treatment***	Sight words
			2			No difference	
Robins & Thompson	1990	180	1-5	N/A	Average/above	Gains for both	Vocabulary
			1-4			Maintenance for both	Comprehension
			5			Loss for treatment***	
Carver & Liebert	1995	43	3,4,5	N/A	N/A	Maintenance	Vocabulary
						Maintenance	Rate

*SES=socioeconomic status
**N/A= information not clearly available
***p≤.05

CHAPTER 3
RESEARCH METHODOLOGY

Setting

This research was conducted in a poor, rural county of approximately 60,000 residents located in Northeast Florida. (Florida counties have the same geographic boundaries as Florida school districts.) The United States 2000 Census indicates that this county is plagued by poverty. 80% of all elementary children attending public schools receive federal meal subsidies; every elementary school in the district is a Title 1 school. The median household income is $28,180. These conditions of poverty provide enormous challenges to the school district to educate every child well. Of the six northeast school districts in Florida, this county had the lowest reading scores on the 2002 FCAT at the 4th, 8th, and 10th grade levels (Florida Times Union, 2002).

Two district schools participated in this study. One of the participating schools -- School RB -- is more urban in nature than the other. Children from this school live largely in subsidized high rise concrete housing projects located throughout the district's county seat. The other participating school -- School O -- is very rural in nature. Children from this school live largely in single-wide and double-wide trailers scattered deep in the hinterland of the county along washboard dirt roads and scrub pine forests. Participating children in this study were drawn equally from each school with each school contributing 23 students at post-test.

Participants

Teachers

One teacher was chosen from each of the participating schools to administer the program a Grade 1 teacher from School O and a Grade 2 teacher from School RB Both were exemplary veteran teachers who had each been nominated as Teacher of the Year by their peers at some point during their teaching careers One teacher Mrs C had taught kindergarten through Grades 3 over the course of twelve years at two schools The other teacher Miss K had taught Grade 2 at her current school for seven years Both teachers had coordinated after-school and summer reading programs for CRC during the last several years and were enthusiastic about the prospect of a program that provided books

to students during the summer months Almost as important, both Mrs C and Miss K. could drive a stick shift vehicle

Students

Recruiting students. At the beginning of the *Summer Books!* study it was expected that students would be recruited from only School O The Children's Reading Center Inc (CRC) a non-profit literacy organization I founded, had run an after-school tutoring program at the school the previous year and I knew all of the second grade teachers and the administration well Upon learning about the proposed study, the principal of the school readily volunteered to send a letter home to the parents of all of the school s second grade students endorsing the *Summer Books!* program and encouraging them to participate The principal s letter was accompanied by a brief description of the program (to satisfy Institutional Review Board requirements) and a permission slip to be signed and returned to the school A deadline was established in April for the receipt of the

parent permission slips By the deadline, only one parent had responded The principal then gave permission to me to recruit the three second grade teachers to call the homes of their students (approximately 75 altogether) and personally encourage the parents to participate in the program Every second grade parent was called with 28 parents eventually agreeing verbally to the project By mid-April 26 signed permission slips had been submitted

The research plan called for between 50 and 60 subjects At this point, recruiting was open to School RB also a high poverty Title 1 school The principal at School RB was also enthusiastic about the prospect of having his students receive books all summer and readily agreed to send a letter home to parents similar to the one sent by School O Second grade teachers were immediately recruited to call the parents of their students (approximately 85) This expanded recruitment of parents brought the total of participants from both schools to 55 Before pre testing began, three parents removed their children from the program citing "changed plans for the summer

Sample characteristics Fifty-two second graders from a rural school district in northeast Florida participated in the beginning of this study during the summer of 2002 By fall six of the students had been eliminated from the data analysis four had moved to another school within the county two had moved out of the district to an adjacent county Forty-six students completed the posttest assessments in the fall of 2002

At the beginning of the study all participants were second graders Five of these students were retained and remained second graders for the school year 2002-2003 Forty-one of these students were passed on to the third grade The average chronological age for the entire sample was 7 96 years

Participants came from two high poverty Title 1 schools and together the schools participation in the federal meal subsidy program exceeded 80 percent of its students The overall percentage of students in the study sample receiving meal subsidies was 85 percent.

As can be seen on Table 3-1, of the total sample, 25 students (54%) were male and 21 students (46%) were female Ethnically and racially the sample contained 20 African Americans (43%), 23 Whites (50%) and three non ESOL Hispanics (7%) Based on 2002-2003 statewide assessments, 29 students in the sample (66%) were classified as reading at an *At-Risk* or *Basic* level (below grade level) 12 students (23%) were reading at a *Proficient* level (on grade level) and five students (11%) were reading at an *Advanced* level (above grade level)

Table 3-1 Description of the sample

Characteristic	Total sample (n=46)	Summer Books! (n=26)	Control (n=20)
Age in years	7 96 (SD=3 9)	8 00 (SD= 4)	7 92 (SD= 38)
SES*	85%	85%	85%
Gender			
Male	54%	58%	50%
Female	46%	42%	50%
Ethnicity			
White	50%	54%	46%
African American	43%	38%	50%
Hispanic (non-ESOL)	7%	8%	5%
Achievement level**			
Below	66%	69%	63%
Proficient	23%	22%	24%
Above	11%	9%	13%

*Refers to percentage of group participating in free/reduced meal subsidy
**Based on SAT-9 assessment for SY 2002 2003

Measurement Tools

Children's literacy development was conceptualized as a multifaceted phenomenon consisting of attitudes as well as skills related to written language. Assessments used in this study measured reading motivation, comprehension, and fluency. Pretesting was conducted in May and post testing was conducted in August and again in December to test maintenance effects. All of the measures were administered in May; the same measures were administered again in August. The standardized measure of comprehension was administered in December after the results of the first posttest indicated no differences between groups on the other measures.

To ensure an accurate assessment of the range of children's reading capabilities, the following assessments and performance tasks were selected as pre- and posttest measures. The Motivation to Read Profile (Gambrell, Palmer, Codling, & Mazzoni, 1996), the Scholastic Reading Inventory (Scholastic, 1999), the San Diego Grade Word List, and the Oral Reading Assessment of Fluency (Meiosh 2002). Two measures of fluency – reading rate and reading accuracy were derived from the results of the oral reading assessment. I administered all of the assessments individually to students over a period of five days except the Scholastic Reading Inventory, which was administered as a group assessment by reading specialists from each school (Table 3-2).

Reading Motivation

Motivation to Read Profile (Gambrell et al., 1996). The Motivation to Read Profile (MRP) consists of two basic instruments: a reading survey and a conversational interview. Only the reading survey portion of the instrument was used for this study. It consists of 20 items and uses a 4-point response scale. The survey assesses two specific

Table 3-2 Administration schedule of primary measures used in the evaluation

Measure	Pretest May	Posttest August	Posttest December
Reading Fluency			
rate	X	X	
accuracy	X	X	
automaticity	X	X	
Reading Motivation			
MRP	X	X	
Reading Comprehension			
SRI	X	X	X

dimensions of reading motivation *concept as a reader* and *value of reading* Items that focus on self-concept are designed to elicit information about a student's sense of self efficacy and self-perceived competence relative to peers The value of reading items attempt to determine the value that the student places on reading tasks

Using Cronbach's (1951) alpha statistic to assess internal consistency the test revealed a reliability coefficient for self-concept of r = 0 75 and for value r = 0 82 Test-retest produced a reliability coefficient of r =0 68 (self-concept) and r =0 70 (value) In addition, the authors found a statistically significant relationship between the scores on the MRP and levels of reading achievement for a stratified random sample of third- and fifth graders (N=45)

The survey was downloaded onto a lap top computer using an OMNI form software program that allowed the test to be simultaneously scored as it was given Each item was read aloud to the student who indicated which response was to be entered into the computer The administration of the MRP survey took approximately 7 10 minutes for each student

Reading Comprehension

Scholastic Reading Inventory – Interactive (Scholastic, 1999). The Scholastic Reading Inventory (SRI) is a computer-adaptive norm referenced standardized assessment designed to measure readers' comprehension of narrative and expository text It was developed using the Rasch one-parameter item-response theory (IRT) model to relate a reader's ability to the difficulty of the items – an analysis similar to that used in the calculation of scaled test scores such as the Graduate Record Examination or the National Assessment of Educational Progress During the test administration, the computer adapts the test continually according to the students responses to the questions using a test bank of over 3000 questions Compared to a fixed-item test where all of the students answer the same questions, as a computer-adaptive test, every reader takes a different test

The SRI technical manual reported a split-half reliability coefficient (Spearman-Brown corrected) of r = 0 94 It is correlated with other standardized measures of reading comprehension the California Test of Basic Skills (r – 0 74) and the North Caroline End of-Grade Test of Reading Comprehension (r =0 73)

The SRI was chosen to be used in this study because it is an assessment that is used in all of the elementary schools and most of the middle schools in the school district in which this study took place As a computer assessment, it can be administered individually or as a group Reading specialists at School O and School RB tested participating students during the middle of May, the end of August, and the middle of December

Reading Fluency

For the purposes of this study fluency is construed as being composed of reading rate (words read per minute) reading accuracy (percentage of words read correctly in a passage), and reading automaticity (the ability to be able to rapidly recognize high frequency words in isolation) Rate and accuracy were measured by the Oral Reading Assessment for Fluency and automaticity was measured by the San Diego Graded Word List

Oral Reading Assessment for Fluency (Malosh, 2002). The Oral Reading Assessment for Fluency (ORAF) is a type of informal reading inventory (IRI), author created developed for use in the Putnam County School District in 2000 and subsequently refined and updated for the present study For the purposes of this test fluency is construed as being composed of reading rate (words read per minute) and reading accuracy (percentage of words read correctly in a passage) The ORAF does not measure prosody another element of fluency that pertains to a child's ability to be able to read with expression

During the pretest, using benchmark books from the Fountas and Pinnel (1996) leveling scheme, students read orally from increasingly difficult passages while I took a running record of the reading on a second copy of the passage to determine deviation from the text The running record generated a percentage score from words read correctly in a passage divided by the total number of words in the passage to measure reading accuracy The child was also timed as he/she read each passage and a score of words per minute (WPM) was generated as a measurement of reading rate Passages ranged from Level D (end of kindergarten) to Level N (beginning of fourth grade) using every other level (i e , levels D, F, H, J L, N) Students began reading at Level D and continued

through each successive passage until the accuracy rate determined by the running record was at a frustration level of 89 percent or below (Betts, 1947 Clay 1991) At that point, the administration of this assessment ended Reading rate in the form of a WPM and reading accuracy were determined at each level until the frustration level was reached The last passage read at the instructional/independent level (i e with 90% accuracy or above) became the *target* passage with which to conduct further assessments

San Diego Graded Word List (GWL). The GWL assesses the aspect of fluency having to do with automaticity – a student s ability to be able to rapidly read high frequency sight words in isolation The test consists of six groups of 10 sight words each that have been designated as being at the preprimer primer first grade, second grade, third grade, or fourth grade level The test begins with simple words and gradually becomes more difficult Students are tested 10 words at a time with each word being flashed before the student at approximately one-second intervals to determine sight recognition rather than ability to decode. Administration of the test stops when the child is unable to recognize 50% of the words in a given list Total words recognized on sight are tallied for a final score The test takes from 2 to 6 minutes to administer depending upon the student s reading level

Procedure

Three weeks before the end of school, I assessed all students in the study (N=52) on fluancy As stated earlier fluency was construed, for the purposes of this study, as having three facets rate, accuracy and automaticity Six reading passages were used to determine a WPM and accuracy score Passages were spaced at readability intervals of approximately six months beginning with a passage at 1 3 years readability (Passage D) and ending with one at 4 3 years readability (Passage N) These assessments were

administered over a period of five days At this pretest, I also administered a reading motivation assessment to determine students feelings of self-concept as readers and the degree to which they valued reading In addition, the reading specialist at each school assessed students in comprehension using a standardized, norm referenced reading inventory used district-wide in all elementary schools

Upon completion of all the assessments, students were divided into School O and School RB groups and then randomly assigned by pulling name cards from an envelope to either the *Summer Books!* group (n=29) or to a no-books control group (n=23) by the *Summer Books!* teachers, with School O teacher assigning students to groups for School RB and School RB teacher assigning students to groups for School O Neither of the teachers knew any of the students from the schools for which they were assigning them

Parents of those children selected for the control group were sent a letter informing them of their children s designated group (They were also informed that while their child had not been selected to receive books during the summer he/she would be able to select five books to take home at the end of the study) The parents of children assigned to *Summer Books!* were called and a convenient time to make home visits during the week was arranged Parents were also asked to send maps and/or detailed directions as to how to get to their homes Two weeks before school ended, final preparations were made for the *Summer Books!* bookmobile that was to be used in the study

Summer Books! Beginning the first week that school was not in session (i e the first week of June), Mrs C and Miss K. began making home visits with the bookmobile Miss K drove the vehicle to the homes of children from School RB on Mondays, Tuesdays, and Wednesdays of each week Mrs C picked up the bookmobile on Wednesday evenings and visited the homes of School O children on Thursdays, Fridays,

and Saturdays of each week Teachers visited approximately five families a day Visits ranged from 15 to 45 minutes depending upon the family participation For example one little girl in the study had six siblings ranging in age from two-years to seventeen-years old, all of whom usually asked to check out books along with their single mother

Both teachers observed the same routine based on a checklist that had been created before the beginning of the study They were expected to do the following

1) Park outside of the home of the student and wait for the child to come out to the truck (Note Most visits were conducted outside unless the teachers were invited into the homes by the parent or guardian, usually because of bad weather)

2) Using a lap top computer fill out a simple survey that asks the student questions about which books he or she had read during the week how many times the books had been read, whether they were read alone or with other family members and what the child liked (or didn t like) about the books (Note If a family member were present, the teacher asked whether the parent had observed the child reading and how many times during the previous week, whether child and parent had read together and talked about any of the books, and whether the child had read with other family members)

3) After completing the survey, ask the child to pick an interesting portion from one of the books selected from the previous week and read it aloud (Note book readings tended to be between 75 and 125 words each) While the child reads (usually a page or two), take a running record using Clay s (1993) notations (Note This running record was used to help the teacher monitor the current reading level of the child in order to help with the selection of books for the coming week) After a running record is taken return all books to the bookmobile

4) Allow child to choose up to five new books to read for the coming week (Note The teacher encouraged the child to pick a "just right" book that wasn't too hard and wasn t too easy but that would likely be interesting Teachers encouraged the child to pick books at their instructional/independent levels (i e ones they could read with better than a 90% accuracy rate) but allowed the child to select a book that was difficult if it seemed of particular interest Because the teachers were familiar with most of the titles in the bookmobile and the reading ability and interests of their students they took an active role in suggesting books to read Children were never forced to select a book they did not want to read)[1]

5) Invite interested family members to select a book or magazine to check out once the child had made her/his selection

Summer Books[1] ran for 10 weeks from the first week school was out of session (first week of June) to the weekend before teachers were required to return to school for preplanning (first week of August) The following is a brief description of one visit made by Mrs C on which I accompanied her toward the end of the summer

A Snapshot of One Summer Books' Visit

It was an early Thursday morning and the Florida sun already promised to fulfill its late July potential as the thermometer attached to the side panel of the Summer Books' bookmobile read 84 degrees. Mrs. C. parked the vehicle in the rutted, gravel driveway of Brandon Cooper's home in western Putnam County and lightly beeped the horn. She visited Brandon first each Thursday morning because of all her students in the Summer Books' program he lived in the most remote area of the county about seven miles northeast of State Road 20 along a labyrinth of dirt lanes. It was wise to visit Brandon in the mornings before the afternoon showers made the washboards roads impassable to a vehicle such as the bookmobile.

Brandon (seven) a mousy haired boy with bright blue eyes, his brother Jeremy (six) and his sister Shalli (three) were waiting patiently on the metal steps of their grandmother's baby blue single-wide trailer when Mrs C arrived. Brandon held a small beige canvas bag filled with books and emblazoned with the words Summer Books' on his lap All three children were barefoot but appeared freshly scrubbed. The boys

[1]There were no awards or incentives for reading books in this program and no points were attached to books to accumulate In addition, children were not "quizzed" about their books, but were encouraged to talk about what interested them Children *did* keep a current record of the books they read during the summer and were told that on the last visit of the summer they would be allowed to select any book from the truck to keep as their own

[2]All names are pseudonyms

wore matching Jaguar tee shirts and Shalli was dressed in a lightweight sunflower bedecked smock that reached to her ankles. They lived with their paternal grandmother Mrs. Cooper a thin, stooped woman in her late fifties who seldom smiled or talked. According to her Brandon and Jeremy s mother abandoned them when they were toddlers, and their father –Mrs. Cooper's son -- is in prison. Shalli, a half-sister has lived with her grandmother since she was an infant In all her summer visits, Mrs. C had never met or heard of an elder Mr Cooper and so assumed Mrs. Cooper was raising the children on her own

To the right of the trailer was a broken down metal swing set that had a knotted rope hanging from the top bar There was a small well-kept garden behind and to the left of the trailer that appeared to be producing cherry tomatoes, okra and summer squash in abundance At Mrs. C 's arrival an old dog with arthritic joints slowly rose from his sandy bed under the trailer and sauntered over to the bookmobile to be duly petted.

As soon as Mrs. C engaged the emergency break, Brandon Jeremy and Shalli ran to greet her They were young naturalists every one of them and insisted that Mrs. C come to the garden to see a praying mantis that they had spotted earlier that morning Like any first grade teacher worth her salt, Mrs C knows a lot about bugs and talked to them briefly about how important praying mantises are to gardeners. On the way back to the bookmobile Brandon told Mrs. C. that he wanted a book about praying mantises to read this week. Nature books, the Magic Tree House series by Mary Pope Osborne and lately the Bailey School Kids series by Dadey and Jones had been Brandon s top picks during Mrs. C s visits.

Back at the truck, Jeremy and Shalik knew to keep themselves busy while Mrs. C spent a little time with Brandon. Mrs. Cooper watched from a distance, leaning against the door jam of their trailer holding a mug of coffee and a cigarette. Using a survey downloaded onto her laptop, Mrs. C began by asking Brandon to tell her what books he had read since their last visit. She asked how often, when, where, and with whom he had read the books and noted the responses. She also asked him to tell her anything he especially liked (or didn't like) about the books he had selected. After a few minutes, she stepped away from the bookmobile and addressed a few questions to Mrs. Cooper about how and how often her grandson read this week, if they talked about the books together at all, and if he had read with other family members or friends, again noting the responses on her laptop. She helped Brandon fill out the titles, date, and authors for the books he read the preceding week on his "Books I Have Read" list so they could both keep track of the number of books he has read through the summer (Figure 4-1).

After completing the survey, Mrs. C asked Brandon to find a couple of pages in his favorite book and read them aloud to her. She noted the level of the book and did a quick running record of his reading to see that he was still fully within his instructional independent level. She collected the books, returned their cards to their slips, and returned the books to the bookmobile. While she did this, she told Brandon to pick some new books (up to five books) and directed him to the shelves within the bookmobile where he was most likely to find a "just right" book. Predictably, he picked a couple of nature books and two new Bailey School Kids books. Mrs. C also showed him a book she has found for him on salamanders (last week the children had brought a captured lizard to her). She knew that this particular book was probably at Brandon's frustration level, but he was so enthralled with the topic she believed he'd persevere in

reading it. She apologized for having no books on praying mantises, but promised to look for one for him for the coming week.

After Brandon checked out his five books and placed them in his canvas bag, Jeremy and Shalli were invited to pick out books for themselves. Jeremy, a first grader, picked out a couple of level D books and Shalli found a Disney picture book in the back of the bookmobile to 'read.' Mrs. C. solicited a promise from Brandon and Jeremy to help Shalli with her book. Forty-two minutes after arriving, she got a hug from the children and a brief wave from Mrs. Cooper and headed out to her next Summer Books! visit.

Materials

Summer Books! bookmobile. Bookmobiles have a long and rich history in America (Wood, 1988). They have been, and still are, an extension of the services offered by the conventional library. They allow central libraries to offer patrons in outlying areas and those who can't easily travel a quality of service they would not otherwise receive. The earliest bookmobiles were horse-drawn, coming into existence in the first decades of the 20th century. Motorized bookmobiles date from about the time of World War I.

The bookmobile used in the *Summer Books!* program consisted of a used truck donated to CRC and outfitted with a topper designed to carry books. Unlike modern library bookmobiles that are stocked on the inside with books and allow for entrance of children into the vehicle, but similar to the design of the original bookmobile, this vehicle had side panels that opened parallel to the ground on either side revealing shelves of books that could be reached from the outside of the truck. Children stood outside of the vehicle with the teacher to make their selections. There were also less accessible shelves of books in the bed of the truck that could be reached through the back doors.

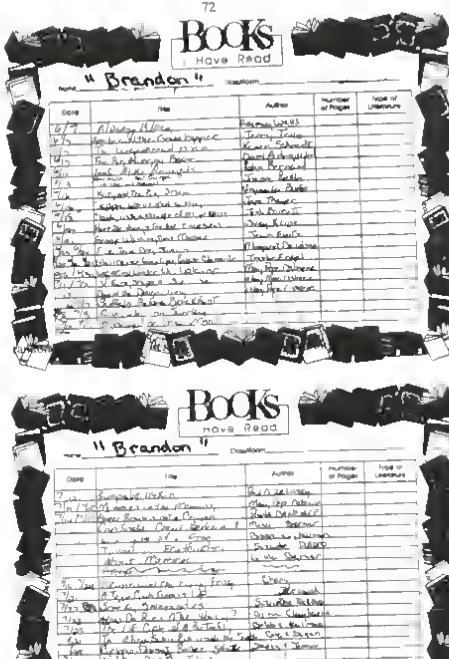

Figure 4-1 Brandon's Books I Have Read List

Books. On its side shelves the *Summer Books!* bookmobile carried books ranging from preprimer to fifth grades (Levels A through T) that were leveled according to the Fountas and Pinnal s (1996) leveling system in genres that included fantasy, fairy tales, picture books chapter books, biography science historical fiction poetry and plays (Please see Fountas and Pinnell 1996 for a complete description of each level) Fiction books outnumbered nonfiction books by a three to one ratio The back of the truck held young adult novels, hi/lo selections, pulp fiction, preschool picture books, popular magazines for adults and teenagers, and local newspapers for family members to choose from As the summer progressed, more books were added to the collection to accommodate students interests (e g Sunshine State Readers, new Harry Potter books, and the *Magic Tree House* series) By the end of the summer the bookmobile housed about 1000 books representing approximately 300 separate titles All books were paid for by a federal family literacy grant that I had written

Analysis

The measurement problem The difficulty of using an informal reading inventory to measure reading growth is that data are typically collected on variable levels of text It is difficult to quantify the progress that a student makes reading and answering questions on a passage at one level during one testing as compared to reading and answering questions on a passage at a more difficult level three months later For example, if Molly (a pseudonym) read a passage at Level D with 98 percent accuracy and at a rate of 80 words per minute and two months later read a passage at Level H (a more difficult level) with 93 percent accuracy and at a rate of 75 words per minute it could be assumed that progress had probably been made, but we would not know the specifics of that progress

because, in essence, we would be comparing *apples to oranges* that is two scores for two separate tests at two points in time

To complicate matters even more, there are often wide disparities of difficulty among books that have been designated at a particular level Generally broad criteria are used to level books in most leveling schemes based on number of words novelty of concepts, degree of illustration support, proportion of unique to familiar words, predictability and any number of other criteria (Rog & Burton, 2000) In the Fountas and Pinnell (1996) scheme, one book at Level D may be judged to be at the end of kindergarten while another may be judged, using a traditional readability formula, to be at the middle of first grade At the N level, books may be at readability levels indicating middle of third grade or beginning of fourth grade or anywhere in between Fountas and Pinnell's levels are intended to be broadly and flexibly defined, but this poses problems in using them for assessment purposes. As Scott Paris describes the problem

> Most IRI systems of text levels are imperfect Differences among passages are often large and differences among successive levels are usually ordinal (i e., each is more difficult than the previous one) but not of equal intervals (i e., the difference between A and B may not be the same as the difference between B and C) Thus IRIs provide poor measurement scales (Paris 2002, p 169)

However Paris (2002) suggests several solutions to this problem, one being to use the same texts during each test Measures for the reading of identical texts can be compared over time and across children providing multiple measures of reliable reading performance He cautions though, in order to avoid testing effects that testing intervals should be no less than three months between pre- and post tests

Children being assessed with ORAF were given identical *target* passages to read for both the pre- and posttests To ensure that the benchmark passages in the ORAF were interval in scale as well as ordinal, passages were subjected to the *Flesh Kincaid Reading*

Ease Formula (Fry, 2002) to provide a more objective numerical score than typically given using an IRI. Passages were found within books that had readability levels approximately six months apart (Table 3-1). At the posttest in August, students were only assessed on their *target* passage – the last passage to be read during the pretest (not during the intervention itself) at an instructional/independent level (i.e., read with accuracy of 90% or better). For example, if our Molly scored a 93 percent on Passage D, a 90 percent on Passage F, and a 86 percent on Passage H during the May pretest, Passage F would become her *target* passage for the August posttest. All test target passages were taken from books **not** used in the Summer Books! program.

Table 3-3. Readability levels and word counts for leveled passages used in the QRAF

Passage Level*	Word Count	Readability Level**
D	41	1.3
F	100	1.9
H	100	2.5
J	100	3.1
L	100	3.7
N	100	4.3

*Based on Fountas and Pinnell (1996).
**Based on the *Flesh Kincaid Reading Ease Formula* (Fry, 2002).

Statistical Tools. Two statistical tests were conducted to analyze the differences in means on the various subscales of reading between the treatment and control groups. To determine equivalence between control and treatment groups, simple independent t-tests were administered. On those scales where the raw scores clearly showed comparability in means and variances (i.e., standard deviations), an analysis of variance (ANOVA) was conducted. On those scales where the raw scores deviated from one another considerably, the more powerful analysis of covariance (ANCOVA) was conducted to determine if there was reason to reject the null hypothesis.

CHAPTER 4
RESULTS

Introduction

As seen in Table 3-2 data collection occurred in the spring of second grade and twice in the fall of third grade for participants in the study with measures varying somewhat at second posttest At first posttest, data were collected on 46 students down six students from pretest (N = 52) Two children in the study moved out of the county and four children enrolled in different county schools during the summer During the fall between first and second posttest, two more students transferred to other district schools leaving a sample size of 44 at second posttest

In this chapter data will be presented for the control group that provide support for the assertion in the literature that low-income children experience reading loss during the summer especially those children who have been given few opportunities to practice the skills they have acquired during the school year Pre- and posttest data for the control group will be examined for each academic measure. Next, pretest data will be presented for the sample, confirming that the experimental and comparison groups were equivalent An analysis of the impact of access to appropriate books during the summer vacation on the reading achievement of low-income children will then be presented Differences in the groups at first and second posttest will be examined through analysis of variance and analysis of covariance procedures A description of the results will be presented for each research question Finally student achievement for the treatment group will be analyzed

for those students who began the summer reading below grade level to those beginning the summer reading at- or above-grade level

Summer Reading Loss for Control Groups Students

As discussed in Chapter 3 the literature suggests that the rate of reading achievement of poor children as a group declines during the summer vacation break especially absent of educational opportunities to curb that loss The results from this study provide tentative evidence to support this assertion

Looking at group means for the control group – that is, students receiving no increased access to appropriate books during the summer vacation break from pretest (May) to posttest (August) on academic measures of reading achievement (i e fluency and comprehension) there were demonstrated losses for each measure Table 4-1 shows the means and standard deviations on reading fluency and reading comprehension for the control group at pretest and first posttest

Table 4-1 Means and standard deviations for control group for reading fluency and comprehension at pretest and first posttest

	Control Group (n=20)	
Measure	Pretest (May) Means (SD)	Posttest (August) Means (SD)
Reading fluency		
Rate	69 50 (24 84)	66 20 (29 73)
Accuracy	94 85 (6 33)	94 30 (3 73)
Automaticity	42 35 (13 20)	41 70 (13 37)
SRI		
Comprehension	268 97 (258 97)	238 20 (243 69)

A series of dependent sample t-tests were conducted to compare the means of the control group from pre- to posttest The tests revealed no significant differences for any

measure For rate $t(19) = 1.237$, $p = 0.231$ accuracy $t(19) = 0.524$ $p = .606$ automaticity $t(19) = 0.41$ $p = 0.688$ SRI, $t(19) = 0.83$ $p = 0.415$

Narrowing the focus to determine what percentage of the children in the control group demonstrated absolute gains or losses for each measure also provides further evidence that the reading achievement of children in this high poverty sample declined over the summer vacation. A comparison with the Summer Books! group reveals that a higher percentage of the control group children lost ground. Gains were determined when a student had a raw score on a measure at first posttest that exceeded his/her raw score at pretest. Likewise, losses were determined when a student had a raw score on the posttest that was lower than the raw score on the pretest. The exact same score on the pretest and posttest resulted in a "No G/L" – no gain or loss. Table 4.2 demonstrates for each academic reading measure what percentages of the group lost, gained, or remained at a standstill over the summer months. These percentages are compared to those students who participated in the Summer Books! intervention.

Table 4-2 Percentage of control and Summer Books! groups that demonstrated absolute losses, gains, or neither from pretest to first posttest on measures of fluency and comprehension

	Control (n=20)			Summer Books! (n=26)		
Measure	Loss	Gain	No G/L*	Loss	Gain	No G/L*
Reading Fluency						
Rate	60%	35%	5%	38%	50%	12%
Accuracy	45%	50%	5%	23%	46%	31
Automaticity	55%	35%	10%	35%	62%	3%
Reading Comprehension	65%	30%	5%	42%	54%	4%

Note *indicates no gain or loss

Equivalence of Groups at Pretest

As a true experiment where students were randomly assigned to a treatment or control group, equivalence of groups in this study is largely assumed. However, because of the

small size of the sample (N=46), it is useful to look at pretest data to confirm this assumption Alpha is set at 0 05 throughout this study

Pretest data Independent t-tests were conducted on the pretest scores of the treatment and control group for each measurement There were no statistically significant differences between the Summer Books! and control groups on any of the academic reading pretest measures. rate t(45) =0 37, p= 0 54 accuracy t(45) =0 15 p =0 69 automaticity t(45) = 0 08 p = 0 78 SRI, t(45) = 0 45 p = 0 51 MRP Self Concept, t(45) = 1 722 p = 196 MRP-Value, t(45) = 029 p = 866

Table 4-3 presents the means and standard deviations for Summer Books! and the control group on the pretest battery San Diego Grade Word List the Oral Reading Assessment of Fluency the Scholastic Reading Inventory and the Motivation to Read Profile It also shows the mean *target* level at which each group was at pretest As can be seen, there was a high degree of comparability between the two groups as indicated by their scores on the pretest measures

Research Question #1: Access to Books and Motivation to Read

The first research question in this study pertains to the effect of increased access to appropriate books over the summer vacation break on the reading motivation of low socioeconomic students It was hypothesized that children who have regular access to books they can read and want to read will increase their motivation to read

The assessment used for this question was the survey portion of the Motivation to Read Profile (MRP) (Gambrel et al 1996) The MRP assessed two specific dimensions of reading motivation concept as a reader and value of reading

Table 4-3 Means and standard deviations for Summer Books[1] and control groups at pretest

Measures	Summer Books[1] (n=26) M (SD)	Control (n=20) M (SD)
Reading Fluency		
Rate	74 04 (25 66)	69 50 (24 84)
Accuracy	94 65 (2 98)	94 85 (6 33)
Automaticity	43 62 (12 02)	42 35 (13 20)
Reading Level		
Target passage level	2 71 (1 1)	2 74 (9)
Reading Comprehension		
SRI[4]	213 81 (285 26)	268 40 (258 97)
Reading Motivation		
MRP-Self Concept	29 11 (4 41)	30 20 (6 04)
MRP-Value	32 22 (3 98)	32 42 (5 20)

Note Scores on accuracy) represent percentage scores

Table 4-4 shows means and standard deviations for each dimension of motivation for the treatment and control groups at the posttest immediately following the summer intervention.

Table 4-4 Means and standard deviations for Summer Books[1] and control group on measures of motivation at August Posttest

Measure	Summer Books[1] M (SD)	Control M (SD)
MRP		
Self-concept	34 04 (4 03)	26 60 (4 49)
Value	32 62 (3 62)	32 70 (2 92)

An ANOVA conducted on the two group means demonstrated that there was a statistically significant difference in the *self concept* (i e concept as reader) dimension at

the time of the first posttest in August.[1] This suggests that the children in the treatment group had more positive concepts of themselves as readers than did the control group. The results of the ANOVA demonstrated no statistically significant differences in means on the *value* dimension of value of reading. Table 4-5 shows the results of the ANOVA.

Research Question #2: Access to Books and Fluency

The second research question of this study pertained to the effect of increased access to appropriate books over the summer vacation break on the reading fluency of low socioeconomic students. It was hypothesized that children who have regular access to books they can read and want to read will demonstrate less loss in fluency scores relative

Table 4-5 Analysis of variance results for the two dimensions of reading motivation by group at August posttest

Measure	Source	df	SS	MS	F
MRP					
Self-Concept	Between Groups	1	625.478	625.478	34.847*
	Within Groups	44	789.762	789.762	
Value	Between Groups	1	8.094	8.094	.007
	Within Groups	44	490.354	11.144	

*p< .01

to those of a comparable group of students not receiving increased access. For the purposes of this study, three measures were used to assess fluency: rate, accuracy, and automaticity. Table 4-6 gives the means and standard deviations for these three measures on the August posttest.

[1]This significant difference in means was not detected until the data were reanalyzed at the end of the study. As a result, no further testing was conducted in December to determine possible maintenance effect for this outcome variable.

Table 4-6 Means and standard deviations by group for fluency measures at August posttest

Measure	Summer Books! (n=26) M (SD)	Control (n=20) M (SD)
Reading Fluency		
Rate	73 77	66 20
	(27 03)	(29 73)
Accuracy	94 92	94 30
	(4 53)	(3 73)
Automaticity	42 96	41 70
	(13 01)	(13 37)

An ANOVA was conducted for each measure comparing the treatment and control groups at the posttest in August There were no statistically significant differences for any comparison reading rate, $F(1\ 45) = 0\ 472$ $p = 496$ reading accuracy $F(1\ 45) = 003$ $p = 954$, reading automaticity $F(1\ 45) = 104$ $p = 749$ Table 4-7 shows the full results of the ANOVA for the fluency measures Due to the comparability of results on measures of fluency between the treatment and control groups at the August posttest, no further testing or analysis was conducted

Research Question #3: Access to Books and Reading Comprehension

The third research question asked whether increased access to appropriate books during the summer vacation break affects reading comprehension performance in low socioeconomic primary students I hypothesized that increased access would positively affect levels of reading comprehension To test this hypothesis, a standardized reading inventory – the SRI – was administered to each participant in May August, and again in December

Table 4-7 Analysis of variance results for the three dimensions of fluency rate, accuracy automatic word recognition for both groups at August posttest

Measures	Source	SS	df	MS	F
Reading Fluency Rate	Between Groups	376 251	1	376.251	472
	Within Groups	35060 615	44	796 832	
Accuracy	Between Groups	6 037	1	6 037	003
	Within Groups	778 396	44	17 691	
Automaticity	Between Groups	17 991	1	17 991	104
	Within Groups	7629 162	44	173 390	

August posttest. Table 4-8 shows the means and standard deviations for both groups on the SRI at the first posttest An analysis of variance showed that there was no statistically significant difference between either group at posttest $F(1\ 45) = 000$ $p = 0\ 998$

Table 4-8 Means and standard deviations for reading comprehension as measured by the SRI at August posttest

Measure	Summer Books! (n–26) M (SD)	Control (n=20) M (SD)
SRI	238 38 (239 34)	238 20 (243 69)

Note Standard deviations vary widely in the SRI because its metric begins at –700 A beginning reader category noted as BR ranges from –700 to +99

December Posttest. The design of the study called for the schools' reading specialist to administer the SRI to students in December as a second posttest Table 4-9 shows the means and standard deviations for both groups on the SRI at the second posttest administered in December An analysis of variance was performed on the data indicated that there was no statistical significant difference between group means at the second

posttest: $F(1,43) = .007$, $p = .936$. As supported by the literature though on school effects, a comparison of the groups from August to December indicates that each made comparable progress while school was in session.

Table 4-9. Means and standard deviations for reading comprehension as measured by the SRI at December posttest.

	Summer Books! (n=24) M (SD)	Control (n=20) M (SD)
SRI	412.50 (211.42)	406.90 (248.05)

Differences in Achievement Between Full Treatment and Partial Treatment Groups

The intention of this study was to look at the results of the treatment group as a whole and compare these results to a comparable group of students who were not provided the same level of increased access to books. The treatment group was composed of students who generally had increased access during the summer to appropriate books to read. As seen in the previous section, except for one facet of reading motivation, there were no statistically significant differences between the entire treatment and control groups in reading achievement at the end of the summer on any measure. Nor were there statistically significant differences at second posttest.

However, the treatment group did not experience the treatment in a homogeneous fashion. While the majority of children ($n = 17$) were available for a high percentage of the visits, a much smaller group ($n = 9$) missed many visits. Participation in fewer visits naturally affected the access to books that these children had. Table 4-11 shows the means and standard deviations for each subgroup of the treatment in terms of weeks of visits and corresponding numbers of books read. The larger group is, for discussion purposes, labeled the *full treatment* group. Students in this subgroup attended

bookmobile visits between seven to ten weeks with a mean number of visits of 8 8 The smaller group for discussion purposes, is dubbed the *partial treatment* group Students in this group attended bookmobile visits between four to six weeks with a mean number of visits of 5 1 Children in the full treatment group on average read more than two and a half times the books as children in the partial treatment group

Given the difference in how students experienced the treatment, I chose to focus attention on the reading performance students who had participated fully in the treatment and compare them to the control group The partial treatment group (i e the group containing those students who participated minimally in the program) is not included in the follow-up statistical tests due to its small sample size (n = 9)

Table 4-11 Means and standard deviations for weeks attended and number of books read by students in the Summer Books! full and partial treatment groups

	Full Treatment (n – 17)	Partial Treatment (n – 9)
Weeks attended		
Mean	8 8	5 1
(Standard Deviation)	(1 1)	(9)
Books Read		
Mean	21 29	8 11
(Standard Deviation)	(9 69)	(3 91)

Note The total program ran for 10 weeks Full treatment designates those children who received between 7 – 10 visits partial treatment designates those children who received between 4 – 6 treatments Number of books read determined by student self-report

Full treatment and control differences for reading motivation. Parsing out the results of the study for full treatment and control groups for measures on motivation demonstrated a similar picture as that for the entire treatment and control group comparisons as can be seen on Table 4-12

Table 4-12 Means and standard deviations for reading motivation measures for full treatment and control groups

Measure	Full Treatment (n=17) Means (SD)	Control (n=20) Means (SD)
MRP		
Self-concept	35 07 (4 13)	26 60 (4 49)
Value	31 11 (2 98)	32 70 (2 92)

An ANOVA conducted on the two group means demonstrated that there continued to be a statistically significant difference in the self-concept dimension of motivation at the time of the first posttest in August, but no statistically significant differences in means on the value dimension MRP-Self Concept F (1 35) = 36 08 p = 0 000 MRP –Value, F (1 35) =-0 091, p = 0 748

Full treatment and control differences for reading fluency. A comparison of means between the full treatment and control groups for measures of fluency demonstrate slightly greater differences between the means than those of the complete treatment groups, when compared to the control group Table 4-13 shows the means and standard deviations for all measures of fluency at posttest for full treatment and control groups.

Table 4 -13 Means and standard deviations for full treatment and control group at first posttest on measures of fluency

Measure	Full Treatment (n=17) Means (SD)	Control (n=20) Means (SD)
Reading Fluency		
Rate	75 53 (31 48)	68 00 (29 73)
Accuracy	95 35 (3 28)	94 85 (3 73)
Automaticity	42 88 (13 85)	41 70 (13 37)

An ANOVA conducted on the two group means demonstrated that there was no statistical significance on any fluency measure rate $F(1\ 35) = 0\ 558$ $p = 0\ 460$ accuracy, $F(1\ 35) = 0\ 186$, $p = .669$ automaticity, $F(1\ 35) = 0\ 070$, $p = 0\ 794$

Full treatment and control differences for reading comprehension Unlike the results of the other reading measures which demonstrated little differences between a comparison of the Summer Books' (n=26) and the full treatment group (n=17) to the control group an analysis of the results for the reading comprehension data presented a somewhat different picture

A comparison of the raw scores of the posttest for the full-treatment and control groups indicates very little difference in results with scores slightly favoring the control group Table 4-14 shows the means and standard deviations for the SRI at first posttest

Table 4-14 Means and standard deviations for full-treatment and control groups at first posttest (August) on comprehension measure

Full-Treatment (n=17) Means (SD)	Control (n=20) Means (SD)
229 12 (223 99)	238 20 (243 69)

An ANOVA conducted on these data reveal $F(1\ 35) = 0\ 014$, $p = 0\ 907$ However this analysis alone does not give a full and accurate picture of student achievement for this measure Although the pretest scores at the beginning of the study for the control group and full-treatment group were statistically equivalent, students, on average in the full treatment group scored 96 46 lexiles *below* students in the control group, on average Table 4-15 presents raw scores in comprehension for both groups at pretest, first posttest (August) and the change scores from administration of the first test to the second test for each group

Table 4-15 Pretest, first posttest, and change scores means for the full-treatment and control groups in reading comprehension

	Full Treatment (n=17) Means	Control (n=20) Means
Pretest	172.94	268.40
Posttest (August)	229.12	238.20
Change Score	56.18	-30.2

Children who had participated for at least 70% of the Summer Booksᵗ intervention (i.e. full-treatment group) clearly performed better than children in the control group. When parsed, the full treatment group, on average, gained 56 lexiles while the control group lost 30 lexiles resulting in more than an 86 lexile disparity in change scores for the two groups at posttest. Table 4-16 presents the results of an ANOVA conducted on these change scores.

Table 4-16 Analysis of variance results for gain scores on reading comprehension for the full-treatment and the control groups at August posttest

Measure	Source	df	SS	MS	F	P
SRI	Between Groups	1	68559.573	68559.573	1.750	.114
	Within Groups	35	39174.105			
	Total	36				

An administration of the more powerful ANCOVA on these data, controlling for initial word rate, resulted in $F(1,34) = 2.891$, $p = 0.089$. Figure 4-1 presents graphically the change scores for the two groups at August posttest.

Achievement levels at second posttest. A comparison of the raw score means of the full treatment group and the control group at second posttest in December indicated that there were no statistically significant differences between the groups on the measure of reading comprehension. An ANOVA revealed that $F(1, 33) = 0.164$, $p = 0.688$. Gain scores were not analyzed because of the difficulty in delineating effects from the summer intervention and the classroom instruction that occurred between August and December.

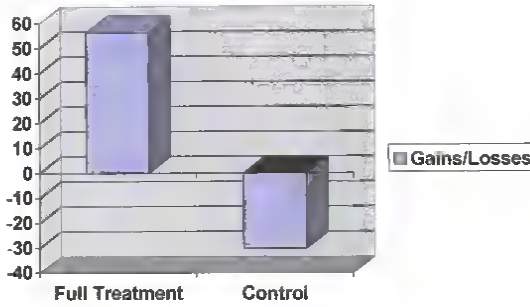

Figure 4-1 Mean gains and losses for full treatment and control groups on reading comprehension as expressed in lexiles at posttest (August)

Gains and Losses of Summer Books! Students at Different Levels of Achievement

As stated earlier over 69% of the treatment group was reading *below grade level* (Basic or At Risk) at pretest and about 31% was reading *on-* or *above-grade level* (Proficient or Advanced) These levels were determined by the school through the reporting of the statewide assessment administered in the winter of the 2002-3002 school year As a group *below level* students progressed 61 lexiles on their SRI test from pretest to first posttest and *on- or above- grade level* students lost 57 lexiles from pretest to first posttest, exhibiting classic regression to means effects. An ANOVA showed there was no statistically significant difference in the gains/losses made by the two groups as a result of the intervention $F(1,25) = 1.823$ $p = .190$ Of the 18 students who were reading

below grade level at pretest only 1 achieved an SRI score that placed her on grade level at first posttest Of the 8 students reading at or above grade level at pretest, only 1 student achieved a score at first posttest that moved him into the below grade level The mean score of the *on grade level* group at the end of the summer was 498 The mean score of the *below grade level* group was 117 Table 4-18 shows the breakdown in SRI scores by those achieving below-grade level and at or above-grade level at pretest and first posttest

Table 4-17 Mean scores on SRI by below-grade level, and at- or above-grade level groups at pretest and first posttest

	n	Pretest	Posttest (August)
Below Grade Level	18	56	117
At or Above Grade Level	8	554	498

Note Range of scores associated with performance standards for end of Grade 2 Below grade level 199 and below at-grade level 200-500 above grade level 501 and above (SRI Technical guide 1999) Scores are in lexiles.

Summary of Findings

The results of this study were varied The following is a summary of findings

- Overall the control group lost ground on all academic reading measures administered but the results were not statistically significant
- There were losses and gains for students participating in the Summer Books! program
- There were statistically significant differences between the treatment and control groups on the affective motivation measure of *self-concept*, but no statistically significant difference between the groups for the motivation measure of *value*
- There were no statistically significant differences on any measure or comparison of reading fluency (i e rate accuracy, automaticity)
- There were no statistically significant differences on any measure or comparison of reading comprehension that warranted the rejection of the null hypothesis However there were differences in comprehension gain scores between the control group and the full treatment group (i e those students who had fully participated in the Summer Books! intervention) that approached statistical significance

- Children with histories of low achievement in reading who participated in the Summer Books! intervention did not improve enough to achieve grade level reading scores at the end of the summer even when they had participated fully in the program

A thorough discussion of these findings takes place in Chapter 5 of this dissertation

CHAPTER 5
DISCUSSION

Introduction

The rationale for this study was to determine if regular access to appropriate books during the summer vacation break (i e , books children could read and would want to read) would stem summer reading loss in high poverty second graders Twenty-six low socioeconomic second graders were given opportunities to read high interest books for 10 weeks during the summer vacation break. A comparable group of students in a control group was given no increased access to books All students were then posttested on a variety of reading measures to assess the impact of the treatment on reading performance

The results of this study indicate that while there was a statistically significant difference on the impact of increased access to print on an affective measure of reading, there were none for any academic reading measures Based on these results, the null hypotheses that posu no difference' between the population of children who received books and those who did not, cannot be rejected However, a closer examination of the results indicated that those children who participated fully in the program might have been differentially affected by the treatment than those who participated minimally A discussion of the results for each of the research questions will follow

Research Question #1: Access to Books and Reading Motivation

While the concentrated focus of this study was on an examination of the impact of increased print access to academic reading performance the most striking result of the study came from the data on an affective measure reading motivation

As stated earlier, the survey portion of the Motivation to Read Profile (Gambrell et al 1999) explored two specific dimensions of reading motivation self-concept and value of reading. In this instrument, self-concept refers to one's perceived competence or self-efficacy for completing a reading task. Value refers to the value one assigns to a reading task one is performing or to reading in general. The theory posits that children who have a strong expectation for success when beginning a reading task will be motivated to persevere in the task and to continue in the future with similar tasks. Thus, a child who feels he/she can be successful at reading books will probably be motivated to continue reading books. At the same time, if a child perceives reading is valuable and important, and has personally relevant reasons for reading, the child is more likely to engage in reading more (Ames & Archer 1988 Dweck & Elliot, 1983)

While the results of the MRP survey pertaining to the *value* dimension of motivation were virtually unchanged from pretest to posttest for each group – perhaps because young children, unlike their older school mates, almost universally report that they value reading (Snow et al , 1998) – the results pertaining to the *self-concept* dimension showed substantial differences between the groups. Data from the MRP indicated that increased access to appropriate books for the treatment group had a statistically significant impact on students' concept of themselves as readers compared to the results for those children who did not receive increased access to books during the summer. Why might this have happened? Three possible explanations emerge from the literature: (1) the manageability of texts, (2) the ability to self-select books of interest, and (3) the absence of an external reward system.

Manageability of texts. Table 3 -1 reminds us that a full 69% of the treatment group sample was reading below grade level at pretest as determined by the results of the prior

year s state assessment As stated earlier, children reading below grade level often find themselves having to read books that are too difficult for them (Clay, 1971, Cunningham and Allington, 2002 Krashen, 1989 McGill-Franzen, 1993 Rog & Burton, 2002) and as a result may be less engaged and enjoy the task less (Fountas and Pinnell 1999 Gambrell et al. 1981 Pressley 1998)

Allington and McGill-Franzen (in press) recommend creating summer programs that provide "fingertip access" to children of books that they can read and want to read Given the strong and positive association of successful reading experiences to better reading progress, we wanted students in this program to feel self-efficacious about their reading experiences Research indicates that this happens when students read books that are manageable that is, books that can be read at a child s instructional or independent level

At pretest, I determined through a series of oral readings of increasingly difficult passages, the highest Fountas and Pinnell s (1999) level at which a child could read and still remain within his or her instructional/independent level (i e the child's target level) Although there are wide variations within the Fountas and Pinnell leveling system, this target level gave the Summer Books' teachers a good place to start with the child when the bookmobile visits began As a result, while not dictating the levels that children needed to be reading at, teachers gave students some guidance as to where to find books that might be "just right" based on the pretest data shared with them "Just right," for the purposes of this study, meant those books that the child could read with 90% accuracy or better This guidance was generally necessary because children that are average and low ability readers frequently choose books above their reading levels (Donavan et al 2000 Fielding & Roller 1992) In this study children did not always know how to find an appropriate book to read and relied on teachers to make suggestions Weekly running

records conducted by the teachers gave them continuous feedback as to the progress their students were making and generally within what difficulty range they needed to be reading In short, children in the study spent most of the summer reading books they could read

Self selection of interesting books Evidence is also strong that children who are given opportunities to select those books that are of interest to them are likely to have increased motivation to read (Deci & Ryan, 1985 Lamme, 1976 Morrow & Weinstein, 1984 McGill-Franzen, 1993, Turner, 1995) In the Summer Books! program, children were given a wide variety of books representing many topic and genres to choose from Children were free to pick any books that were of interest to them Interest then, is the second element of matching books to readers Being able to read a book is not the same as wanting to read a book. It was very important during the study that the bookmobile maintained a stock of books on many topics that would be of interest to students We were careful to have many genres represented (science fiction to easy chapter books to riddle books) and the latest "hot" books available (e.g Harry Potter books and current Sunshine State Readers) When the bookmobile did not stock a book that a child (or parent) wanted teachers were instructed to find it if at all possible, by the next visit Sometimes this meant using their own library cards to check out books locally By the end of the summer teachers knew each of their students well and had a pretty fair idea of not only where they were reading, but also what they liked to read At the same time, when students were very interested in a topic (as Brandon was with salamanders and praying mantises), teachers, at times, encouraged students to try to read books that might have been at their frustration level, assuming that their high level of interest would lead

them to persevere even with the more difficult material. In short, children spent most of the summer choosing books to read that were of interest to them.

Absence of an external reward system. Early on in the Summer Books! program, a student being visited by Miss K. picked out a book from the bookmobile and asked how many points it was worth and what prizes there were for "this reading program." Within the first couple of weeks, that question was asked of both teachers, in a variety of ways, by almost every child in the treatment group. "How many points is this book worth?" and "Where are the prizes?"

Miss K. knew immediately the nature of this question, as did Mrs. C., because both School O and School RB have invested heavily in reading incentive programs, and that is what their students knew. Although each school participates in a different program, they are both built on the same principles and processes. Each child is assessed at the beginning of the year to determine his or her reading level and that level corresponds to a letter or color devised by the creators of the program (say, chartreuse for middle first grade or BR for *beginning reader*). Generally, books are coded with those colors or labels to make them easily identifiable to teachers and students. (So far, this system does not diverge much from the system used in Summer Books!.) However, depending upon its length and difficulty, the book is assigned a specific *value* represented in points, so that, big books with lots of pages are *worth* more than little books with fewer pages, no matter the age or ability of the child. After the children select a book – typically, not all books in a classroom or school library have points associated with them; children, of course, are allowed to read these books, but they do not win any points for them – and read it, they take a computerized quiz to determine if the book has been *comprehended* (usually 80 percent accuracy is the goal). If children pass the quiz, they collect points for the value of

the book and can either trade those points in for a prize (e g a book mark pencil etc) right then and there or wait and accumulate points and trade them in later for a bigger prize (e g a pizza coupon, stuffed animal, etc)

Reading incentive programs have become big business in this nation with companies providing already leveled books to schools, training for media staff, software to administer the program, software to quiz the kids, stickers to mark the books, prizes to reward the students, and an abundance of *scientific evidence* (usually generated by their own people) to prove the worth of their programs Every elementary and middle school in Putnam County participates in a reading incentive program so it was natural for students to ask their visiting teachers what the point values of the bookmobile books were and for what prizes the points could be redeemed after all, this is what they had learned to expect at school When Miss K and Mrs C told students there were no points, no prizes, and no quizzes in the Summer Books! program, students were puzzled and many were clearly disappointed (though they did not mind skipping the quizzing process)

Many educators who understand the link between volume of reading to reading achievement assume incentive programs are a great way to encourage students to do more reading They understand it is an external reward system, but believe it is a means to *jump start* children into the habit of reading and once that habit is established, children will come to love reading for its own sake and no longer need to be rewarded externally In a short article reviewing the effects of various reading incentive programs on student achievement and attitudes, Jeff McQuillan (1997), examines the available evidence and concludes that despite their popularity "there is no clear causal relationship in any of the studies conducted so far between the use of rewards and an improvement in reading attitudes achievements or habits" (p 111) [1]

At the heart of the issue is the difference between intrinsic motivation and extrinsic motivation for performing a task. Wigfield (1997) describes extrinsic motivation as being motivated to do something as a means to an end, such as receiving a reward for performing a certain task (e.g., getting a pizza for reading a book). Intrinsic motivation is doing a task for its own sake (e.g., reading a book because it is inherently enjoyable or interesting to read a book).

Reading incentive programs, by definition, function as an external motivation to get children to read by rewarding them with points and prizes. The hope is that this external impetus will eventually lead to more intrinsic motivation for the student, that is, the student will eventually enjoy reading for its own sake and not need to be continually rewarded.

Unfortunately, there is dark side to reading incentive programs. External rewards that initiate or regulate performance of a task can affect a student's perceived sense of self-determination and efficaciousness for reading because choices are controlled (Deci & Ryan, 1985). In addition, they may signal to the student that reading is inherently an unattractive activity, for why would anyone offer a reward for something that was fun to do? As a result, rewarding children to read more may lead to less reading in the long run, not more or as (Kohn, 1993) puts it, children may end up being *punished* by the rewards they receive for reading (i.e., experiencing a sense of diminished enjoyment or satisfaction in their reading), especially if the rewards are anticipated before the activity.

[1]It is interesting to note that two of the summer reading studies (Carver and Liebert, 1995 and Robbins and Thompson, 1991) reviewed in Chapter 2 made extensive use of reading incentives in getting children to read in their programs but neither showed any improved reading outcome in its participants.

occurs (Deci & Ryan, 1985). Swartz (1982) documented this phenomenon in his research. Observing classes where children received rewards for every book they read, he notes:

> The rate of book reading increased astronomically ... but the [reward] system had other effects. It changed the pattern of book selection (short titles with large print became ideal). It also served to change the way children read. They often were unable to answer straightforward questions about a book, even one that they had just finished reading. Finally, it decreased the amount of reading children did outside of school. (p. 53)

He found that subjects were less efficient in completing reading and other tasks when incentives were used than when they were not. Skimming, guessing, reading fly-leafs and asking others who had read a book in order to be able to quickly take a quiz to earn points are common "reading" behaviors in incentive programs (Sheffield, 2002). These behaviors sometime replace those that distinguish a seriously engaged reader: reading with intense involvement, with curiosity, with a search for understanding, and with what Csikszentmihalyi (1975) has referred to as *flow*: the act of *losing* oneself in a meaningful task. Creating external rewards for something that is inherently motivational runs the risk of decreasing internal motivation for an activity that we want to encourage. It also runs the risk that students will only want to read when they are rewarded for reading. When the rewards stop, maybe the reading will too.

After the initial disappointment that children exhibited when they found there would be no tangible rewards for reading books, they began to pick books using other criteria (e.g., inherent interest in a topic, curiosity, desire for information) that are typical of serious readers. Reading books to satisfy internal rather than external demands may have positively affected children's concept of themselves as readers.

Manageability of texts, opportunities to select books of interest to them, and the absence of an external reward system for reading certain books over others are three

possible explanations supported by the literature for the considerable improvement on scores on the MRP

Research Question #2. Access to Print and Reading Fluency

The results of this study provide no support for the hypothesis that increased access to appropriate books during the summer significantly improves the reading fluency of high poverty second graders Reading fluency in this study was measured on three dimensions rate -- as measured by the number of words a child could read per minute on a passage at his or her instructional level accuracy -- the percentage of words a child could read correctly on the same passage and automaticity -- the number of high frequency sight words a child could rapidly recognize The results of the posttest (see Table 4-4) on these measures indicate that there was virtually no difference on the performance of the two groups on any measure of fluency

The results of this study stand in stark contrast to much of the literature on reading that posits that the best way to improve one s reading is to read widely (Allington, 1977 2001 2002, Anderson et al., 1988, Cipielewski & Stanovich, 1992, Collins, 1986, Foertsch, 1992, Krashen, 1993) Generally the literature supports the idea that part of being a skilled reader is the ability to recognize words rapidly and accurately and this ability depends largely on the frequency with which a child has been exposed to a particular word and met with success in identifying it (Adams, 1990 Ehri, 1995 Juel & Minden-Cupp, 2000 Pressley 1998, Spear-Swerling & Sternberg, 1995) Experience with print builds automaticity that leads to increased levels of fluency

An easy explanation for the disparity of the results of this study with the wisdom culled from the literature may be that traditional measurement instruments in reading are not sensitive enough to measure the small gains in reading achieved in a relatively short

summer intervention, especially for children s oral reading performance gathered from leveled books or passages (Clay 1993 Paris, 2000 Robbins & Thompson, 1991) Clay (1993) has suggested that standardized tests are incapable of measuring small, incremental gains, but states that observational tasks like those found in her survey of early literacy achievement are more appropriate assessments to measure young children's reading progress during short interventions The problem with this argument is that observational measures were used to assess gains in fluency in Summer Books! The accuracy task and the automaticity task are almost identical to Clay s Running Record and Ready to Read Word Test Although Clay does not include a rate task in her survey, it is an observational task as well All of the fluency measures used in this study were chosen specifically because they are sensitive to small, incremental changes in young children's reading behavior

Another explanation for the results found in this study may have to do with the nature of texts being read Recently Carver and Leibert (1995) have looked at the effect of reading books at different levels of difficulty upon gain in reading ability They have advanced the theory that reading improvement comes when children read material that is at or slightly above their reading level (i e , material at their instructional level) Although reading relatively easy material (i e at the independent level) helps to maintain reading rate, this type of reading does not advance reading levels because children encounter few, if any unknown words, concepts, or complex knowledge structures

In their study (described in Chapter 2), they found results that suggested that students who read even a considerable amount of text at their easy level do not progress in reading

> The data suggest that elementary school students who spent 15-30 hours during the summer reading relatively easy library books do not gain in their reading level or vocabulary, do not gain in their reading rate, and do not gain in their reading efficiency. It seems reasonable to conclude that reading relatively easy books does not improve [reading] ability ... at least for average elementary students. (p. 41)

There is some support for this position in the results of this study. After gathering and analyzing the data on fluency after the first posttest, I reviewed the running records that the visiting teachers had taken on each child during the Summer Books! visits. Of the 189 running records recorded on the weekly session sheets, 164 (86%) indicated that the child was reading books at an independent (i.e., easy) level, which suggests that students in the program spent most of the summer reading books at their independent level – something encouraged by the visiting teachers. At the end of the summer, scores on reading rate, accuracy, and automatic recognition of sight words for the treatment group remained steady across the occasions of the pre- and posttest. The same results were observed for the control group.[2]

Research Question #3: Access to Books and Reading Comprehension

As with the area of fluency, the results of this study provide little support for the hypothesis that increased access to books during the summer months improves reading comprehension. On average, the high poverty second graders in the treatment group made small, statistically nonsignificant gains on their reading comprehension scores while second graders in the control group incurred small losses from pretest to first posttest.

[2]No systematic attempt was made to determine how much reading the control group students did during the summer vacation break.

It is possible that the same mechanism that resulted in the flat lining of scores for fluency measures was at work with the reading comprehension results: children who read mostly easy books during the summer did not encounter enough challenging new vocabulary and concepts to significantly improve their reading comprehension.

However, in reading comprehension, unlike in the area of fluency, looking at the results of the study from the perspective of the whole treatment group versus the control group tended to mask the differences within the treatment group. As indicated earlier, some students within the treatment group received visits from the bookmobile for almost the whole summer; others received visits for less than half of the summer vacation. The picture of results changes somewhat when looking at children who participated in the Summer Books! program all summer as opposed to those who participated minimally. The cut off point between those two groups was arbitrarily set at between six and seven weeks before the study began. Children who participated in the program from between four to six weeks were considered to be part of the *partial* treatment group. Those that had participated between seven to ten weeks were considered to be part of the *full* treatment group. On average, children in the former group participated for almost four fewer weeks than the latter group (5.1 weeks versus 8.8 weeks). As a result of the duration of their participation, children in the full treatment group, on average, read two and a half times the books that children, on average, read in the partial group.

In reading comprehension, while there were no demonstrable differences in raw scores on the first posttest for the two groups, children who had participated fully in the treatment showed gains on scores between the pretest and first posttest that approached significance ($p = .086$) when compared to gains made by children in the control group. Interestingly, those children who had received books, but only minimally (i.e., children in

the partial treatment group) did not fare much better than the control group children who received no additional access to books (-22 and -30 respectively).

Stronger effects may have simply been the result of the full treatment group reading many more books than the partial treatment group which is supported by the literature (Anderson et al., 1988; Krashen, 1993; West, Stanovich, & Mitchell). However, an alternative explanation must be explored as well. All parents in the study volunteered to have their children participate in the Summer Books! program. Even when they knew from the outset that their child may or may not be selected to receive bookmobile visits, it can be safely assumed that they valued the *idea* of their children having the opportunity to receive books during the summer. However, *valuing* an idea and *committing* oneself to that idea are not always the same thing.

Because the age of the children in this study precluded their having much control over their own level of participation in the program (i.e., primary-age children pretty much have to go where their parents go at this point in their lives), it is probably safe to say that parents, to a large extent, determined the degree of participation of their children in the program. Both visiting teachers reported that certain parents were much more conscientious about their children's participation than others. These parents made a point of being home for the visits. When they could not be home, they called to arrange an alternative time for the visit, or they called to reschedule a visit if they missed it. Parents who were concerned that their children participate fully in the program *may* have been more likely to monitor their children's reading habits during the week, to discuss the books that their children were reading, and even to participate themselves during the visits more often. In short, a selection process may have been occurring between the

those full and partial treatment groups in terms of parent participation and commitment If this were the case, the variable of *parent involvement* also supported by the literature (Baker, Scher, & Mackler, 1997 Entwisle et al , 1997 Halle et al., 1997 Lareau, 1987) -- may have been as important as the variable of *access to books* in the results of the study Further research will be needed in the future to tease these two variables apart and to examine how they interact with one another

Limitations of This Study

This study had several limitations The most significant was the size of the sample By most research standards for studies using an experimental design, the Summer Books' sample size was small For a study of this type, Ramtree (1981) suggests using cell sizes of, at least, 30 subjects to assure stability of means Recruitment problems and mortality however, precluded this The size of the *full treatment* group (n = 17), whose comparison with the control group produced the most promising results, was too small to comfortably make generalizations about the larger population because of the risk of variability sampling

Calculating reading rate as words correctly read per minute (WCPM) rather than just words read per minute (WPM) may have given a more accurate profile of a student's fluency level Also instead of measuring a student's reading accuracy on a single target passage as was done in this study instructional levels could have been measured as children picked more difficult passages to read Limiting our measurement to one target passage created an unrealistic ceiling effect (i e , a student could only progress from 90 - 96%) that limited results Using alternative passages of increasing difficulty would have avoided any issue of testing effects as well

Too, the second graders in this sample were drawn from a very impoverished rural population Generalizations cannot necessarily be made to other primary grade students in more suburban or urban settings, or to primary grade students from different socioeconomic levels of society Finally, a high percentage of the sample was poor and had histories of low achievement As children from low-income families do not all experience summer achievement loss at the same rates, these results may not generalize to higher achieving poor students

The Practicality of a Summer Books! Program

As I am primarily an educational practitioner not an academic, I find it is important to include a section about the practicality of a summer intervention like Summer Books! From an administrative perspective, practicality is always made up of two elements cost and effectiveness Too often in education, the first is considered, but not the second "How much does it cost? takes precedence over "Does it work?"

Cost. Three-fourths of the cost of any educational intervention is personnel Because careful data collection was particularly important for the Summer Books! study, I hired especially bright, energetic teachers and paid them more they would have been paid per hour if they had been teaching in a classroom Using that relatively pricey figure to calculate the cost of the program and dividing it only by those second grade students (n=26) who were tracked for receiving books, the cost of the program was $316 per child for a 10-week intervention. That figure immediately dropped to $158 13 per child for 10 weeks when calculating the cost using the number for all of the children who regularly received books during the summer (n = 52) The truck converted to be used as a bookmobile was donated to the Children s Reading Center and serviced free of charge by

a local Firestone franchise All but $1000 worth of books was part of the CRC's regular stock Laptop computers and software also belonged to CRC and were used for multiple programs The cost of gas ran about $20 a week

Although my costs included administrative and assessment expenses when running a Summer Books! program as a school-based program (not as a research study) administrative and assessment costs would come out of the salaries of people already on the payroll that is a school would not incur additional expense in these areas to run such a program Also as a school-based program, library books and cataloguing systems already in place would be utilized A bookmobile has virtually no overhead costs associated with its operation except for maintenance of the vehicle

A traditional summer school program that runs for six weeks (24 days, 5 hours a day) and pays teachers at their regular hourly wage costs about $288 per child for the teacher alone Other costs that would need to be factored into the total cost would include administrative salaries (principals do not generally run summer school), support staff salaries, food service, transportation, classroom supplies, custodial services, maintenance, and utilities that might easily increase that figure to $500 or more per child for a six week program On average operation of a bookmobile program costs, per child, about one-fifth of what it would take to run a traditional summer school program for a comparable period of time However summer schools offer a degree of intensity and opportunities for explicit instruction that a bookmobile does not offer

Effectiveness. As stated earlier, children who are handicapped by both poverty and histories of low achievement need opportunities during the summer for sustained and intensive literacy support to maintain levels of progress achieved during the school year Access to books is necessary but not sufficient for sustaining improved achievement. A

weekly bookmobile intervention does not provide the necessary intensity, but it may be appropriate to include it as part of a sustained summer effort to raise literacy levels Well-designed summer school programs can offer high degrees of literacy support, but they are very expensive As an administrator, I would look for the best of both worlds and consider a combination of approaches to provide my students with the help they needed to maintain progress during the critical summer months. For example, I might arrange for students who needed it to attend an intensive four-week summer *camp* at the beginning of the summer that centered all instruction around a highly engaging theme, say dinosaurs or space travel All reading, writing, viewing, and speaking would take place around that theme, developing literacy through the pursuit of knowledge on that topic At the end of the four-week session, the school s bookmobile would begin making visits, stocked with a higher than usual degree of books, magazines, and videos on the summer school theme so that children could continue their reading and research while away from school Students would bring home journals in which they would be expected to continue to respond to the books they read in whatever form they chose (e g , drawings, plays, short stories, posters) and use the school's voice mail system to regularly share their views and comments about what they had read

Based on earlier figures, the cost of running a *four by six-week* summer intervention that included opportunities for In depth work around an engaging topic as well as continued access to books throughout the whole summer would cost as much as or less than a traditional six week summer school program, thus proving to be effective as well as cost effective

In Chapter 2, I discussed the changes that have occurred in funding for Florida summer school programs at the elementary and middle school levels in the last half

decade The legislature appropriates categorical money in the form of Supplemental Academic Instruction (SAI) that can be used for funding summer schools or for a variety of other supplemental programs for remediating students during the school year Most Florida districts have opted to use their SAI money for funding after-school programs or for hiring more staff to reduce class size during the school year According to state and district level financial personnel, traditional summer school at the elementary level has been "virtually eliminated" in most Florida districts (Thompson, personal communication, February, 2003), though money is still available for summer programs if school districts choose to budget it for that purpose Given what we now know about the achievement slopes for low-income students during the school year and during the summer vacation, these decisions may reflect considerations of cost, but they do not reflect considerations of what is truly effective for stemming summer reading loss in disadvantaged students

Conclusion

Research indicates that children from low-income families do not all experience summer reading loss at the same rates Lower achieving poor children typically experience a greater summer loss than higher achieving poor children (Puma et al , 1997) According to these demographics, children who participated in this study were in double jeopardy -- first by virtue of being poor and second, by virtue of being low achievers. Only those students who participated in the Summer Books! program all summer showed some progress, but the majority of the treatment sample (69%) were at-risk for school failure in reading at pretest, and only one of these children (out of 18) made enough progress during the summer in this intervention to progress to within the average band of reading achievement as indicated by statewide norms

The indisputable conclusion to be drawn from the results of this study is that for children doubly handicapped by poverty and histories of low achievement, access to books during the summer months -- even delivered through the medium of a well-crafted intervention like Summer Books! -- is not sufficient to move children forward enough to narrow the gap between more and less affluent students. High poverty children who are also low achievers must be given opportunities to participate in summer programs that offer high quality instruction as well as access to appropriate books.

It is no accident that the *hourglass* shape of student achievement in this country mirrors the hourglass shape of the United States economy (Entwisle et al., 1997). Poor children, by virtue of the physical and psychological resources available to them outside of school are at a distinct disadvantage when compared to their more affluent peers. Poor children who are also struggling academically are at extreme risk for school failure, even when they participate in high quality instructional programs during the school year if opportunities are not made available to them to sustain the progress they make when school is in session.

There are, of course, no quick-fix educational solutions (Allington & Walmsley, 1995) for eliminating the poor/rich achievement gap in America. A good first step however, is recognizing that summers do not hold the same educational opportunities for all children and establishing educational policies that allow for the creation of programs that increase access to appropriate reading materials, intensive, high quality instruction, and enriching experiences for low-income students during the summer vacation breaks.

APPENDIX A
SAMPLE TARGET PASSAGE FROM ORAF [1]

Level D (Fountas and Pinnell, 1999)
From *The Enormous Crocodile* (Dahl, 1978)
Readability Level, 4.3 (Flesch-Kincaid)
Word Count: 100

The Enormous Crocodile

In the biggest brownest muddiest river in Africa, two crocodiles lay with their head just above the water
One of the crocodiles was enormous
The other was not so big
"Do you know what I would like for my lunch today?" the Enormous Crocodile asked
"No," the Notsobig One asked "What?"
The Enormous Crocodile grinned showing hundreds of sharp white teeth
For my lunch today he said, "I would like a nice juicy little child"
I never eat children," the Notsobig One said "Only fish"
Ho, ho, ho!" cried the Enormous Crocodile
I just don t believe you"

Accuracy _____**%**

Seconds to Read _____ = _____**WPM**

[1] From the *Jump Ahead Tutoring Manual* developed by Melosh for the Putnam County School District, 2000

APPENDIX B
SUMMER BOOKS! HOME VISIT SURVEY

Child s Name _____ Child's ID #
Home Edncator _____ Date of Visit _____ Time ____

Who participated in this meeting? _____
Questions for the child
Did you read these books? _____
Did you read them more than once? _____
Who did you read the books to? _____
Who else in the family read these books? _____
Did anyone read to you this week? _____
Questions for the parent/guardian
Did yonr child read these books? _____
How often did yon see your child reading this week? _____
Did yon and yonr child read together this week? _____
Did you and your child talk about any of the books? _____
Did yonr child read with other family members or friends? _____
Educator assessment of number of books read by child at least once this week _____

Running Record Level _____ # of words _____ %score _____
Educator analysis of reading

Number of books returned this week _____

Books checked out this week to student	Level
t _____	_____
2 _____	_____
3 _____	_____
4 _____	_____
5 _____	_____

Nnmber of books/periodicals checked out to other family members _____

Comments/Observations/Suggestions made to parent/guardian

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BIOGRAPHICAL SKETCH

Geraldine Martin Melosh has been in the field of education as a teacher, administrator and teacher educator since 1972. She has taught pre-kindergarten through adult level students in Ohio, Pennsylvania, California, New York, Florida, West Africa, and Mexico.

From 1992 to 1996 she served as the Superintendent of Schools in Putnam County Florida. In 1999 she founded The Children's Reading Center, Inc., a not-for-profit literacy organization serving children, teachers, and parents. In 2003 this organization opened a charter school targeting struggling young readers, and Ms. Melosh is the principal.

Ms. Melosh received her bachelor's degree at Marietta College in Marietta, Ohio, her master's degree at Union Theological Seminary of New York City. Currently, she is completing her doctoral degree at the University of Florida in Gainesville.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality as a dissertation for the degree of Doctor of Philosophy

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Associate Professor of
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I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate in scope and quality as a dissertation for the degree of Doctor of Philosophy

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